

Arnold G. Wheat
6/21/2017

1 (1)

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NEBRASKA

Case No. 8:16-cv-296

DEPOSITION OF ARNOLD WHEAT

June 21, 2017

GARY GIBSON, JR. and SHAWNA
GIBSON, Husband and Wife,

Plaintiffs,

vs.

BRIESON JENSEN and FARMERS
COOPERATIVE,

Defendants.

APPEARANCES:

FRASER STRYKER PC PLLC

By Alexander D. Boyd, Esq.

500 Energy Plaza

409 South 17th Street

Omaha, Nebraska 68102-2663

(402) 341-6000

Appearing on behalf of Plaintiffs.

BAYLOR, EVNEN, CURTISS, GRIMIT & WITT, LLP

By Randall L. Goyette, Esq.

1248 "O" Street, Suite 600

Lincoln, Nebraska 68508

(402) 475-1075

Appearing on behalf of Defendants.



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1 Pursuant to Notice and the Federal Rules
2 of Civil Procedure, the deposition of ARNOLD
3 WHEAT, called by Plaintiffs, was taken on
4 Wednesday, June 21, 2017, commencing at 1:50 p.m.,
5 at 216 - 16th Street, Suite 600, Denver, Colorado,
6 before Alan E. Bjork, Certified Shorthand Reporter
7 and Notary Public within and for the State of
8 Colorado.

9
10 I N D E X

11 DEPOSITION OF ARNOLD WHEAT

12	EXAMINATION BY:	PAGE
13	Mr. Boyd	3
14	Mr. Goyette	--

16	EXHIBITS	INITIAL REFERENCE
17	Exhibit 1 Curriculum Vitae	5
18	Exhibit 2 Document entitled	9
19	Preliminary Collision	
20	Reconstruction &	
	Analysis, with	
	attachment s	
21	Exhibit 3 Report dated 2/1/17	85
22	by Failure Analysis	
	Accident Reconstruction,	
	by Steve F. Sokol	
23	Exhibit 4 Chapter 5 of the	86
24	Accident Investigation	
	Training Manual authored	
25	by Arnold Wheat	

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1 P R O C E E D I N G S

2 ARNOLD WHEAT,

3 being first duly sworn in the above cause, was
4 examined and testified as follows:

5 EXAMINATION

6 BY MR. BOYD:

7 Q Good afternoon. Please state your full
8 name and business address for the record.

9 A Good afternoon. My name is Arnold
10 Wheat. Office address is 4964 Ward Road in Wheat
11 Ridge, Colorado.

12 Q Mr. Wheat, my name is Alex Boyd. And
13 I'm an attorney representing Gary Gibson and
14 Shawna Gibson in their lawsuit against Brieson
15 Jensen and Farmers Co-op related to the June 26,
16 2013, vehicle accident. So I'm here to ask you
17 some questions about your opinions in this case.

18 What, if anything, did you do to
19 prepare for this deposition other than talking to
20 counsel?

21 A I reviewed the file, made sure that
22 what was -- what I brought with me would be our
23 complete file.

24 Q And when you say your "complete file,"
25 are those all the documents listed in the report,

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<p>1 or are there other materials that would be within 2 the file? 3 A I don't know that they would be 4 completely listed. 5 Q You want to look at it? 6 A Yeah. 7 Q I guess all I want to know is what you 8 have in your file that's not in there, because we 9 can talk about that stuff later that's in -- 10 that's in the report. 11 A I mean, these are the print -- the -- 12 the items listed on Page 3 and 4 are what I would 13 call my primary materials, but, you know, there 14 are things like the State statutes, for example, 15 that I didn't list in that list. 16 Q Uh-huh. 17 A But I had referenced them within the 18 report, so I printed those out to include. 19 Q Okay. Let's talk some more about your 20 background. How -- how are you employed 21 currently? 22 A I work for Accident Reconstruction 23 Services, Incorporated. 24 Q And how long have you been employed 25 with Accident Reconstruction Services?</p>	<p>1 A This is a six-page document 2 detailing -- or I should say summarizing my 3 background, experience, specialized training, 4 education, court experience, memberships, 5 associations, professional presentations, and 6 publications. 7 Q Did you draft Exhibit No. 1? 8 A Yes. 9 Q Is there anything relevant to your 10 professional qualifications and experience and 11 training that's not listed in Exhibit No. 1, 12 anything material? 13 A I don't believe so. 14 Q We'll set that aside. Now, in this 15 case you've been retained by the defendants; is 16 that correct? 17 A That's my understanding. 18 Q What -- and this isn't your first time 19 testifying in a civil lawsuit; is that correct? 20 A Correct. 21 Q Okay. So what percentage of your cases 22 are for the plaintiffs, and what percentage of 23 your cases are for the defendants, approximately? 24 A Litigation-wise it depends on the year. 25 Sometimes we do more plaintiff work, plaintiff</p>
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<p>1 A 34 years. 2 Q Any other professionals there besides 3 you? 4 A Yes, David Lohf, L-o-h-f. 5 Q And what are each of your roles with 6 the company? 7 A We're both traffic accident 8 reconstruction specialists. 9 Q So describe to me what's encompassed 10 within your duties in that position. What -- what 11 do you do within that role? 12 A Well, we investigate and reconstruct 13 traffic crashes involving -- or highway traffic 14 crashes involving everything from bicycles and 15 pedestrians to commercial motor vehicles. 16 Q So how did you come to perform that 17 kind of investigative work? 18 A My background's in law enforcement, and 19 I had about 15 years of law enforcement experience 20 investigating traffic crashes and reconstructing 21 traffic crashes. 22 (Exhibit 1 marked.) 23 Q (By Mr. Goyette) I handed you what's 24 been marked as Exhibit No. 1. Can you identify 25 Exhibit No. 1 for the record?</p>	<p>1 litigation than we do defense. 2 Q What about in the last, say, three 3 years? 4 A I don't recall. I know at least one of 5 these years we had quite a few plaintiffs go to 6 file -- or go to trial, rather. I just don't 7 know. 8 Q Would you say on average it's -- over 9 the course of time it's pretty well split? 10 A Yeah, I try to keep a balance. And 11 I -- I would say it's fairly well split. It may 12 be -- it wouldn't be 50-50, but it's fairly close, 13 typically. 14 Q Why do you say you try to maintain kind 15 of an even split? 16 A Well, I have found over the years that 17 when you work on the plaintiff's side, you have to 18 be mindful of strategies that you would use on the 19 same file for the defense side. So it -- it -- I 20 find it very helpful to be working both on the 21 plaintiff's side as well as the defense side 22 because it -- it helps. 23 Q Sure. Is it true that regardless of 24 which side you're retained by, the ultimate goal 25 is to figure out what happened in the accident; is</p>

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<p style="text-align: right;">Page 8</p> <p>1 that accurate?</p> <p>2 A Yes.</p> <p>3 Q Or I -- I guess the alternative is do</p> <p>4 you have a different goal depending on whether</p> <p>5 you're retained by the plaintiffs or the</p> <p>6 defendants?</p> <p>7 A No, I don't, really, because you need</p> <p>8 to be able to work with the physical evidence and</p> <p>9 facts. And if it's of benefit to a strategy for a</p> <p>10 particular side, then so be it.</p> <p>11 Q Have you worked for the defendants'</p> <p>12 firm before, Baylor, Evnen, in Lincoln, Nebraska?</p> <p>13 A Yes.</p> <p>14 Q How many times -- or how many times do</p> <p>15 you recall working for that firm before?</p> <p>16 A I would say maybe 5 to 8, maybe 10</p> <p>17 files total.</p> <p>18 Q In what kind of time frame?</p> <p>19 A Oh, I have no idea. Probably 5 to 10</p> <p>20 years.</p> <p>21 Q Okay. So maybe one or two a year</p> <p>22 maybe?</p> <p>23 A If that, yes.</p> <p>24 Q So what was the scope of your</p> <p>25 assignment and retention by the defendants in this</p>	<p style="text-align: right;">Page 10</p> <p>1 A Yes, it is. It looks like all, what,</p> <p>2 47, 48 pages here.</p> <p>3 Q Are there any opinions that you intend</p> <p>4 to offer, in this case, that are not contained in</p> <p>5 Exhibit No. 2?</p> <p>6 A Not that I know of right now.</p> <p>7 Q Okay. Other than -- you know, Exhibit</p> <p>8 No. 2 lists some documents you were provided.</p> <p>9 Other than the facts contained within those</p> <p>10 documents, did the defendants or the defendants'</p> <p>11 counsel give you any facts regarding the accident</p> <p>12 that you relied on in forming your opinions?</p> <p>13 A I'd say no.</p> <p>14 Q I note on Page 1, the second paragraph,</p> <p>15 it talks about, "This report summarizes the</p> <p>16 initial observations," based on "the preliminary</p> <p>17 forensic evaluation." What do you mean when you</p> <p>18 call these preliminary or initial opinions or</p> <p>19 observations?</p> <p>20 A Well, my experience has been that in</p> <p>21 litigation, there may be situations where there</p> <p>22 are additional depositions or discovery done after</p> <p>23 the submission of the report. So this would be</p> <p>24 sort of a first shot, and that's why I call it the</p> <p>25 initial report.</p>
<p style="text-align: right;">Page 9</p> <p>1 case? What were you asked to do?</p> <p>2 A Well, initially to review the materials</p> <p>3 that were provided and -- and then develop what I</p> <p>4 needed to relative to the crash and determine what</p> <p>5 happened and more -- as well as why it happened.</p> <p>6 Q Do you recall when you were first</p> <p>7 contacted by the defendants in this case?</p> <p>8 A I don't.</p> <p>9 Q Was it -- I guess in your initial</p> <p>10 materials we were already provided with a report</p> <p>11 from Steve Sokol.</p> <p>12 A Yes.</p> <p>13 Q So before you did anything, you would</p> <p>14 have had that report in your possession; is that</p> <p>15 accurate?</p> <p>16 A Yes, I think that was one of the first</p> <p>17 items in the group --</p> <p>18 Q Okay.</p> <p>19 A -- or one of the items in the first</p> <p>20 group of materials.</p> <p>21 (Exhibit 2 marked.)</p> <p>22 Q (By Mr. Goyette) All right. Handing</p> <p>23 you Exhibit No. 2. Is Exhibit No. 2 a fair and</p> <p>24 accurate copy of the report that you drafted for</p> <p>25 the defendants in this case?</p>	<p style="text-align: right;">Page 11</p> <p>1 Q Is there anything you're currently</p> <p>2 waiting on to add to these opinions, or are these</p> <p>3 set, as far as you know?</p> <p>4 A I'm not aware if I will be receiving</p> <p>5 any depositions. For example, the ones you took</p> <p>6 this morning or tomorrow, I have no idea if they</p> <p>7 are containing anything that would be of</p> <p>8 significance to me.</p> <p>9 Q But you're not specifically waiting on</p> <p>10 anything in particular to add to or change any of</p> <p>11 these opinions?</p> <p>12 A No.</p> <p>13 Q Okay. Within that same paragraph, you</p> <p>14 say that your opinions are "made within a</p> <p>15 reasonable degree of probability, utilizing the</p> <p>16 scientific field of traffic accident</p> <p>17 reconstruction." What do you mean by that?</p> <p>18 A Well, that would be the standard that,</p> <p>19 as an expert witness, I would be held to.</p> <p>20 Q Can you describe what that standard is?</p> <p>21 A Well, that every expert needs to have</p> <p>22 opinions that are based upon a reasonable degree</p> <p>23 of scientific probability within their field.</p> <p>24 Q Sure. So obviously -- well, I'm</p> <p>25 assuming you wouldn't consider that 100 percent</p>

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<p style="text-align: right;">Page 12</p> <p>1 certain. It's something less than 100 percent?</p> <p>2 A It depends on the area of the forensic</p> <p>3 inquiry. Some -- some have a very high degree of</p> <p>4 confidence, and some may not have 100 percent</p> <p>5 confidence, as you said.</p> <p>6 Q Can you give me some examples of each</p> <p>7 of those relevant -- relative to the kind of</p> <p>8 investigation you did in this case?</p> <p>9 A Well, for example, the roadway surface,</p> <p>10 we have a pretty high degree of confidence that it</p> <p>11 was a bituminous asphalt concrete.</p> <p>12 Q Okay.</p> <p>13 A So, you know, that -- that's pretty</p> <p>14 well cast.</p> <p>15 Q Okay. And so what kind of categories</p> <p>16 would be somewhat less certain than that?</p> <p>17 A I would say one thing that comes to</p> <p>18 mind, in fact, your expert, Steve Sokol, commented</p> <p>19 on it, is the speed of the truck, your client's,</p> <p>20 Mr. Gibson's truck. As Steve pointed out, and I</p> <p>21 would generally concur with him, that given the</p> <p>22 dynamics of this particular crash, it would be</p> <p>23 difficult to pinpoint a specific speed of</p> <p>24 Mr. Gibson's truck. So he, Mr. Sokol, assumed</p> <p>25 60 miles an hour, and we did, too.</p>	<p style="text-align: right;">Page 14</p> <p>1 have been higher. I don't think it would be</p> <p>2 significantly lower than 60, but that certainly is</p> <p>3 a logical number given that it's the speed limit.</p> <p>4 Q Do you intend to provide an opinion, in</p> <p>5 this case, that Mr. Gibson was at any point</p> <p>6 exceeding the posted speed limit?</p> <p>7 A At this point, no.</p> <p>8 Q Do you know Steve Sokol at all?</p> <p>9 A I -- I think we met at a conference,</p> <p>10 and I don't know if it was at WREX, W-R-E-X, 2016.</p> <p>11 I recall meeting him, but I don't think -- I don't</p> <p>12 picture him in my mind.</p> <p>13 Q Do you have any understanding of his</p> <p>14 reputation within your field?</p> <p>15 A I don't have anything one way or the</p> <p>16 other. I know he's worked with his dad for</p> <p>17 several years, and I've worked with and against</p> <p>18 his father on several files over the years.</p> <p>19 Q So you haven't worked with Steve Sokol</p> <p>20 before, but you have worked with his father on the</p> <p>21 same side of the case?</p> <p>22 A We've been against Ted Sokol on several</p> <p>23 files. And I think we had a couple, I want to</p> <p>24 call them, multiple vehicle -- or multiple</p> <p>25 vehicles involved in the crash, and we may have</p>
<p style="text-align: right;">Page 13</p> <p>1 Q Okay. And just while we're talking</p> <p>2 about that, you don't provide or are not intending</p> <p>3 to provide an opinion of the actual speed of</p> <p>4 Mr. Gibson's vehicle at any point before or after</p> <p>5 the collision; is that accurate?</p> <p>6 A Well, you can certainly give some</p> <p>7 indications of speed if you want to assume the</p> <p>8 initial speed of roughly 60 miles an hour. The</p> <p>9 speed of impact, for example, would be a function</p> <p>10 of the rate of deceleration of the truck and</p> <p>11 semitrailer for the distance that it skidded prior</p> <p>12 to the impact. So that can be quantified.</p> <p>13 The speed loss during the contact with</p> <p>14 the farm implement can be quantified, if you</p> <p>15 wanted to get real particular about it. But as he</p> <p>16 pointed out, it's the post impact where the truck</p> <p>17 goes off the highway, down the ditch, through a</p> <p>18 bunch of sapling trees, and then hits the big</p> <p>19 trees, that's a little more difficult, and so that</p> <p>20 one has a lesser -- lesser quantity of certainty.</p> <p>21 Q But you would generally agree with</p> <p>22 Mr. Sokol's assumption, for purposes of these</p> <p>23 kinds of calculations, that it was 60 miles an</p> <p>24 hour before the accident?</p> <p>25 A Yes, that would -- I mean, it could</p>	<p style="text-align: right;">Page 15</p> <p>1 been on the same side. It's been several years</p> <p>2 since I've seen Ted.</p> <p>3 Q Let's turn to Page 3 of your report.</p> <p>4 And that lists -- or starts the list of the</p> <p>5 documents reviewed and developed during your</p> <p>6 analysis. I'm familiar with some of these, but</p> <p>7 some of these I'm not.</p> <p>8 No. 3 states, "Interview with the</p> <p>9 investigating officer." What are you referring to</p> <p>10 there?</p> <p>11 A I called up the Wayne County Sheriff's</p> <p>12 Department in Nebraska and eventually talked to</p> <p>13 Deputy Jesse Frank, who was the investigating</p> <p>14 officer on this particular case. And we talked</p> <p>15 about the accident, what he recalled, were there,</p> <p>16 you know, other documents other than the basic</p> <p>17 accident report, those types of things, the</p> <p>18 photographs. That was pretty much the extent of</p> <p>19 the conversation.</p> <p>20 Q Were there any other documents besides</p> <p>21 the police report and the photographs that -- that</p> <p>22 he disclosed to you?</p> <p>23 A Well, as it turned out, that was one of</p> <p>24 the things I -- I recognized that I hadn't heard</p> <p>25 back from him. As I recall, he indicated that</p>

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<p>1 there is some record retention or digital 2 retention that goes through the State system in 3 Nebraska. And he did not believe that hard copies 4 of what I'll call the case file for this crash 5 were maintained by the Wayne County Sheriff's 6 Department. He was going to do some checking, and 7 I never heard back from him. And so I -- I don't 8 know if there's other materials or not. 9 Q Okay. During your conversation with 10 the officer, did he express an opinion as to whose 11 fault the accidents was? 12 A I don't recall if he did or not. 13 Q Safe to say that you didn't rely upon 14 any conclusions that the officer would have made 15 about fault or anything like that regarding the 16 accident in your report and opinions? 17 A No, I did not rely upon it. 18 Q So primarily the interview was just to 19 figure out what kind of documentation was out 20 there and get a general sense of what the police 21 department knew? 22 A Yes, a little bit to get his 23 perspective on things about, you know, what he 24 recalled from his investigation. 25 Q Anything that you discussed with the</p>	<p>1 evidence, for example, was not detectable. 2 Q So based on that, you had to 3 potentially rely more so on the photographs and 4 measurements from the Wayne County Sheriff's 5 Department? 6 A Yes. 7 Q Have you spoken with anyone from the 8 Farmers Cooperative at any point? 9 A Aaron Becker. 10 Q And what did you speak to Mr. Becker 11 about? 12 A He arranged to have an exemplar RoGator 13 be available so we could measure and document and 14 provide those types of services. 15 Q Was that another RoGator that the co-op 16 used, do you know? 17 A Yes, it would be within their fleet. 18 Q Okay. You list "Background material, 19 manufacture-supplied specifications." Who did you 20 obtain that kind of information from? 21 A I think it's listed. For your client's 22 vehicle, the Kenworth truck-tractor and Manac, 23 M-a-n-a-c, semitrailer, we researched industry 24 publications. Truck Index is one of those. We 25 did an online Internet search, because as you</p>
Page 17	Page 19
<p>1 officer that was inconsistent with what was 2 reflected in his police report? 3 A Not that I recall. 4 Q Have you conducted any other interviews 5 with anyone in this case, for example, Mr. Jensen? 6 A I have not talked to Mr. Jensen. I 7 talked to someone from, I think, the Wayne County 8 public clerk's office in the Nebraska Department 9 of Roads and the Nebraska attorney general's 10 office. 11 Q And what were the purposes of those 12 interviews? 13 A To get background information on the 14 location, the highway. 15 Q And what kind of background information 16 are we talking about? 17 A Well, one of the things I learned is 18 that the highway had been repaved shortly after 19 this accident happened, as it turned out, in the 20 summer of 2013. 21 Q Did that repaving influence any of your 22 opinions or -- was that relevant at all in the 23 end? 24 A It did have some relevancy because it 25 -- it gave an explanation as to why roadway</p>	<p>1 know, the truck and trailer burned up. 2 Q Uh-huh. You list here "Federal Motor 3 Carrier Safety Administration's Safety Management 4 Systems and 'Snapshot' data for 'Phil Sims 5 Trucking.'" What was that, and why was that 6 relevant? 7 A That's the public access information 8 for any motor carrier that's under the control and 9 guidance of the Federal Motor Carrier Safety 10 Administration. And it gives us a little bit of 11 an idea of the trucking company. And I typically 12 do that for every motor carrier in crashes that we 13 work on. 14 Q Just to kind of get some background 15 information? 16 A Yes, the size of the company, where 17 it's located, how many units they operate, how 18 many drivers they have. And that gives us some 19 idea if it's a mom and pop operation, or if it's a 20 national carrier like Werner or Crete or something 21 like that. 22 Q And does the size of the company or 23 those kind of factors, do those have -- do those 24 play a role in your analysis? 25 A Not directly.</p>

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<p style="text-align: right;">Page 20</p> <p>1 Q Do they indirectly play a role?</p> <p>2 A Well, my experience over the years has</p> <p>3 suggested that some of the smaller carriers may</p> <p>4 not have all of the controls, procedures, policies</p> <p>5 in place that the larger carriers would. And</p> <p>6 sometimes that leads to situations or -- or status</p> <p>7 situations related to equipment or the driver.</p> <p>8 Q So would some of that be the process</p> <p>9 for hiring drivers?</p> <p>10 A Hiring, training, supervision, yes.</p> <p>11 Q And are those kinds of factors things</p> <p>12 that can contribute to an accident?</p> <p>13 A They can.</p> <p>14 Q Okay. I would like to walk through</p> <p>15 your investigation. So once you were contacted by</p> <p>16 defendants' counsel, what were the first steps you</p> <p>17 took to get started?</p> <p>18 A I reviewed the materials that he</p> <p>19 provided. Then we started doing some background</p> <p>20 work on where the location was, how to get there,</p> <p>21 what the area looked like, what a RoGator was</p> <p>22 because I never heard of that term.</p> <p>23 Q And at some point you -- did you</p> <p>24 perform a physical inspection of the accident</p> <p>25 site?</p>	<p style="text-align: right;">Page 22</p> <p>1 appeared in the police photographs with the actual</p> <p>2 location. We looked at line of sight.</p> <p>3 We documented the movement of</p> <p>4 commercial vehicles through the area and then</p> <p>5 documented the profile of the roadway through</p> <p>6 photography.</p> <p>7 Q You said you "documented the movement</p> <p>8 of commercial vehicles through the area." What do</p> <p>9 you mean by that?</p> <p>10 A Well, while we were out at the scene</p> <p>11 during -- well, the two days we were there,</p> <p>12 several trucks went through the location, and so</p> <p>13 we documented time intervals, for example, for</p> <p>14 them to travel certain distances, the visibility</p> <p>15 of those commercial vehicles at various points</p> <p>16 within the roadway. And that allowed us, again,</p> <p>17 some materials and physical evidence to utilize in</p> <p>18 the evaluation.</p> <p>19 Q Did you determine the speed of any of</p> <p>20 those vehicles -- any of those commercial vehicles</p> <p>21 traveling at that location?</p> <p>22 A Generally, yes, a two-time distance.</p> <p>23 Q What kind of speed range are we looking</p> <p>24 at for what you observed during the time you were</p> <p>25 there?</p>
<p style="text-align: right;">Page 21</p> <p>1 A Yes.</p> <p>2 Q And who performed that?</p> <p>3 A Myself and David Lohf.</p> <p>4 Q Okay. I don't know if it states in</p> <p>5 here when you did that. Do you recall when you</p> <p>6 performed that examination?</p> <p>7 A I could look it up, but I don't recall.</p> <p>8 Q Sometime early 2017?</p> <p>9 A Yes. I'm going to say March rings a</p> <p>10 bell.</p> <p>11 Q Okay. Give me just an overview, an</p> <p>12 outline of what you performed at the scene, and</p> <p>13 we'll get into specifics. But generally, what did</p> <p>14 you do?</p> <p>15 A We documented the appearance of the</p> <p>16 road and surrounding areas going northbound into</p> <p>17 the accident location. Actually, we went all the</p> <p>18 way into Carroll, C-a-r-r-o-l-l, Nebraska and then</p> <p>19 did a southbound approach. Even though there was</p> <p>20 no southbound movement of either vehicle, it gave</p> <p>21 us a complete perspective.</p> <p>22 We documented the scene using a Total</p> <p>23 Station that allowed us to get a three-dimensional</p> <p>24 perspective of the geometry and profile of the</p> <p>25 roadway. We correlated certain locations that</p>	<p style="text-align: right;">Page 23</p> <p>1 A Excuse me, one of the time intervals we</p> <p>2 made, for example, was at the hill that is</p> <p>3 immediately to the north of Highway 98, Nebraska</p> <p>4 State Highway 98, on State Highway 57 just to see</p> <p>5 how fast trucks would be traveling as they</p> <p>6 ascended the hill and got to the crest.</p> <p>7 Q Uh-huh.</p> <p>8 A And then we also did timing from that</p> <p>9 hill crest to the second hill crest, which was</p> <p>10 immediately south of the collision location.</p> <p>11 Q So what speeds did you calculate at</p> <p>12 those two locations for the vehicles you observed?</p> <p>13 A Most -- as I recall, most of the loaded</p> <p>14 trucks were traveling in the 20-, 25-mile-an-hour</p> <p>15 range when they -- northbound vehicles as they</p> <p>16 ascended the hill and crest area, which would be</p> <p>17 consistent with the grade that was present for</p> <p>18 those trucks as they traveled northbound. And</p> <p>19 60 miles an hour plus or minus was fairly common</p> <p>20 for commercial vehicles traveling from that major</p> <p>21 hill to the secondary hill crest area.</p> <p>22 Q And it was past that secondary crest</p> <p>23 where the accident happened to the north of that,</p> <p>24 right?</p> <p>25 A Correct.</p>

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<p style="text-align: right;">Page 24</p> <p>1 Q Did you observe any of those commercial 2 vehicles ever moving into the left lane at any 3 point while they were traveling? 4 A No, I don't recall any. 5 Q Were your vehicles parked on 6 Highway 57, or were they parked somewhere else? 7 A They were parked off the travel portion 8 of the highway. 9 Q So you didn't see any of the trucks 10 kind of moving over to give you some room? 11 A Not that I recall. 12 Q Would that be a typical maneuver that a 13 truck would take if there's no traffic coming in 14 the opposite direction? If there's a vehicle 15 parked on the side of the road, they would move 16 over to give it some room? 17 A Sometimes, not necessarily all the 18 time. 19 Q But you have observed that during your 20 time investigating these types of accidents that 21 sometimes truck drivers choose to do that? 22 A Sometimes truck drivers do. Sometimes 23 they don't. 24 Q Okay. Let's talk Road 857. That's the 25 road that's sort of an intersection of Highway 57</p>	<p style="text-align: right;">Page 26</p> <p>1 sides of Highway 57? 2 A Yes. 3 Q You say, "only serviced various farm 4 fields and related property." What do you mean by 5 that? 6 A Looking at the road from ground level 7 and then correlating that perspective with the 8 satellite images from Google Maps, it's obvious 9 that County Road 857 is not a major thoroughfare 10 in Wayne County. 11 Q You called it a "field access road." 12 A Well, that would be, I think, how most 13 people would, or that's how I would refer to it. 14 Q And why would you refer to it as a 15 "field access road"? 16 A Because it tends to be there primarily 17 to allow farmers access to their fields. I don't 18 recall -- yeah, looking at the satellite image, 19 there does not appear to be a lot of structures. 20 Q So is it your understanding that 857 21 road is really only intended to provide access to 22 either the sides or the rears of these fields and 23 not for through vehicular traffic? 24 MR. GOYETTE: I'll object to form and 25 foundation.</p>
<p style="text-align: right;">Page 25</p> <p>1 where the accident happened, fair? 2 A Correct. 3 MR. GOYETTE: Let me object to the form 4 of the question. 5 Q (By Mr. Boyd) I guess, how would you 6 describe the location of the accident in terms of 7 the roads that were there? Was it at -- was it on 8 Highway 57 near Road 857? 9 MR. GOYETTE: My objection was you 10 said, "sort of an intersection." That was the -- 11 Q (By Mr. Boyd) Okay. Look, regardless 12 of what the legal definition of an intersection 13 is, kind of for laymen's terms it's an 14 intersection of Highway 57 and Road 857 where the 15 accident happened, correct? 16 A Correct. 17 Q We can debate whether that's a, quote, 18 unquote, intersection, but that's what we're 19 talking about is where those two roads intersect? 20 A Correct. 21 Q Okay. So Page 13 of your report talks 22 about Road 857. You said it "was comprised of 23 natural soils." 24 A Yes. 25 Q So it's kind of a dirt road on both</p>	<p style="text-align: right;">Page 27</p> <p>1 A Well, just by looking at it, you can 2 tell that it has traffic on it, at least the times 3 we were there. And that may be a function of the 4 season or activities related to agricultural 5 operations, but it -- it's obviously a county 6 road, but it's not one of their major 7 thoroughfares. That was obvious. 8 Q (By Mr. Boyd) You say on here, 9 "Apparently, the county filed a request with NDOR 10 to obtain that classification." What are you 11 basing that on, and what are you referring to 12 there? 13 A Again, that came from some of the 14 research I did either through Wayne County or the 15 State. 16 Q And what classification are you talking 17 about? What are you referring to? 18 A The minimal maintenance road 19 designation. Apparently that allows a government 20 entity, in this case, the County, to not 21 necessarily maintain the road to current standards 22 under the Federal Highway Administration. 23 Q So it's your understanding that 857 24 road was classified as a minimum maintenance road? 25 A According to the sign and the research</p>

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<p>1 I did, yes.</p> <p>2 Q Did you observe the yellow center line</p> <p>3 on Highway 57 near the accident site?</p> <p>4 A Yes, I did.</p> <p>5 Q Did it consist of two solid lines, a</p> <p>6 solid line and a dashed line? What was it, and</p> <p>7 what does that indicate to northbound drivers?</p> <p>8 A It consisted of a solid line with a</p> <p>9 broken line attached to it, which would indicate a</p> <p>10 no passing zone for southbound vehicles and</p> <p>11 permissive passing for northbound.</p> <p>12 Q And you noted the speed limit at that</p> <p>13 location was 60 miles an hour; is that right?</p> <p>14 A Yes, based on signage near the</p> <p>15 intersection of State Highway 98 and 57.</p> <p>16 Q And in your experience, I believe you</p> <p>17 said, in your report, that's typical for a rural</p> <p>18 arterial highway; is that accurate?</p> <p>19 A Yes.</p> <p>20 Q You said you inspected an exemplar</p> <p>21 RoGator. Is it true you were not able to inspect</p> <p>22 either the actual semi driven by Mr. Gibson or the</p> <p>23 actual RoGator driven by Mr. Jensen?</p> <p>24 A Correct, the truck-tractor,</p> <p>25 semitrailer. Certainly the truck-tractor burned</p>	<p>1 Q And why would you have wanted to</p> <p>2 inspect that particular RoGator?</p> <p>3 A Because it was the vehicle involved --</p> <p>4 or the equipment involved in the accident.</p> <p>5 Q During your investigations, generally,</p> <p>6 not necessarily this specific investigation, do</p> <p>7 you ever retain electronic data generated by any</p> <p>8 of the vehicles involved in the accident or any</p> <p>9 equipment within those vehicles?</p> <p>10 A It depends on what's available and how</p> <p>11 accessible it is.</p> <p>12 Q So if it's available and accessible,</p> <p>13 then you would typically obtain that information?</p> <p>14 A Sometimes, yes.</p> <p>15 Q And -- and why is that?</p> <p>16 A It may be another source of information</p> <p>17 or data for analysis.</p> <p>18 Q And often kind of an objective piece of</p> <p>19 information about speed or location, for example?</p> <p>20 A Possibly.</p> <p>21 Q Now, were you aware of what kind of</p> <p>22 information the RoGator or the RoGator's equipment</p> <p>23 generated at the time of the accident?</p> <p>24 A I recall it had something related to</p> <p>25 GPS tracking or guidance within a field situation.</p>
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<p>1 up. And the RoGator was destroyed in the tornado</p> <p>2 that hit Pilger, P-i-l-g-e-r.</p> <p>3 Q And that tornado was in June of 2014.</p> <p>4 Is that your understanding?</p> <p>5 A Yeah, I researched it, and it was</p> <p>6 pretty devastating to the town.</p> <p>7 Q So after the -- is it your</p> <p>8 understanding that after the accident, the co-op</p> <p>9 repaired the RoGator and continued to use it until</p> <p>10 it was destroyed approximately one year later?</p> <p>11 A I believe so.</p> <p>12 Q And you believe that based on your</p> <p>13 conversations with the co-op?</p> <p>14 A I don't recall if that came from our</p> <p>15 discussion with Aaron Becker or from materials</p> <p>16 that I reviewed or from answers to interrogatories</p> <p>17 or -- or his deposition. I just don't recall the</p> <p>18 source.</p> <p>19 Q But that's your understanding?</p> <p>20 A Yes, there was some interval of use</p> <p>21 prior to it being destroyed.</p> <p>22 Q If the actual RoGator had been</p> <p>23 available, would you have inspected that</p> <p>24 particular RoGator?</p> <p>25 A Obviously.</p>	<p>1 Q And did the co-op retrieve or store</p> <p>2 that data at any time before the RoGator was</p> <p>3 destroyed in 2014?</p> <p>4 A I don't know.</p> <p>5 Q Did you -- if that was available, is</p> <p>6 that something you would have wanted to look at?</p> <p>7 A Possibly.</p> <p>8 Q And why is that?</p> <p>9 A Again, it may be an additional data</p> <p>10 point for analysis.</p> <p>11 Q Did you ask the co-op if that</p> <p>12 information was available?</p> <p>13 A I don't recall specifically asking</p> <p>14 Mr. Becker if it was or was not.</p> <p>15 Q If you had been advising the co-op</p> <p>16 after the storm -- or after the accident in 2013,</p> <p>17 would you have advised them to preserve that data?</p> <p>18 MR. GOYETTE: I'll object to the form</p> <p>19 of the question.</p> <p>20 A Well, I don't know how to answer that</p> <p>21 because I don't know the specifics of the system</p> <p>22 that they were utilizing, if any.</p> <p>23 Q (By Mr. Boyd) If -- if the RoGator had</p> <p>24 GPS data that would have shown the location of the</p> <p>25 RoGator at the time of the accident, is that</p>

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<p style="text-align: right;">Page 32</p> <p>1 something you would have wanted to look at if it 2 was available? 3 A Well, at that point, probably not 4 because I think there's pretty good evidence of 5 where the crash occurred. So we don't need a GPS 6 to tell us where the crash occurred. We have some 7 other higher quality evidence. 8 Q Could the GPS have told you where the 9 RoGator was 30 seconds before the accident? 10 A Well, again, I don't know the answer to 11 that because I don't know what system they're 12 using and don't know what sampling rate that 13 system utilizes. 14 Q Are there GPS systems that could tell 15 you that? 16 A Oh, I'm sure there are. 17 Q And you don't -- you haven't conducted 18 any investigation to determine what kind of system 19 the RoGator had used; is that correct? 20 A I remember reading some of the 21 materials or depositions, I don't remember which, 22 that talked about it. In fact, I think 23 Mr. Jensen's deposition talked about it, but I did 24 not do any independent research after that because 25 it was data that was not available.</p>	<p style="text-align: right;">Page 34</p> <p>1 purposes? 2 A That and the research material we 3 developed, yes. 4 Q The RoGator is self-propelled? Nothing 5 pulls the RoGator, correct? 6 A Correct. 7 Q Did the RoGator involved in the 8 accident have a license plate on it? 9 A No. 10 Q Do you know if it needed to have a 11 license plate on it? 12 A If my research in Nebraska is 13 consistent with what I am familiar with in 14 Colorado, it would be considered an implement of 15 husbandry and does not need a vehicle registration 16 plate because it's not a motor vehicle. 17 Q Did the RoGator involved in the 18 accident have an orange triangle attached to it at 19 the time of the accident? 20 A I don't believe so. 21 Q Do you know if it should have had one 22 under Nebraska law? 23 A I recall that a slow moving vehicle 24 emblem, which I think is what you're referring to, 25 the vehicle -- it's designed for equipment that</p>
<p style="text-align: right;">Page 33</p> <p>1 Q So, for example, if the data was 2 available and it showed that Mr. Jensen's vehicle 3 was stopped for a minute before the accident, 4 would that be relevant to your investigation? 5 A It could be. 6 Q We don't know if that exists because it 7 was destroyed; is that correct? 8 A Correct. 9 Q Now, you couldn't investigate the 10 actual -- or you couldn't inspect the actual 11 RoGator, but you did investigate an exemplar, 12 correct? 13 A Yes, actually three of them. 14 Q Okay. Any material differences between 15 those three and the one that was involved in the 16 accident? 17 A The first implement we looked at had 18 larger tires. The second implement we looked at 19 had the same style of tires but I think was a 20 different year. And the third implement we looked 21 at was the same year, make, and model as the 22 vehicle or as the implement in the accident. 23 Q And based on those three examinations, 24 you felt you had a good idea of the specifics for 25 the one involved in the accident for your</p>	<p style="text-align: right;">Page 35</p> <p>1 travels below a certain rate of speed, and I 2 believe this one could go above that rate of 3 speed. 4 Q So it's your belief that it did not 5 need any kind of an orange triangle indicator on 6 the back of it? 7 A I don't believe it's required. 8 Q And it's your understanding there was 9 not one? 10 A Yes, it's my understanding. I do not 11 believe there was one displayed. 12 Q Okay. You mentioned, in your report, 13 that the manufacturer recommends operating the 14 vehicle with hazard warning lights activated. 15 Tell me what those warning lights look like. 16 A On this particular unit they're 17 rectangular shaped amber flashers on the right and 18 left sides of the vehicle, front and rear. 19 Q Do you know if the hazard warning 20 lights were activated anytime prior to the 21 accident in this case? 22 A I believe they were. 23 Q And what do you base that on? 24 A Either, again, information I reviewed 25 or the depositions or the background material on</p>

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<p style="text-align: right;">Page 36</p> <p>1 the RoGator.</p> <p>2 Q Are you aware of any photographs or</p> <p>3 other physical evidence that indicates the warning</p> <p>4 hazard lights were activated at any time before</p> <p>5 the accident?</p> <p>6 A Not off the top of my head.</p> <p>7 Q Do you believe that whoever was</p> <p>8 operating that vehicle should have had those</p> <p>9 lights on while driving on the highway?</p> <p>10 A Yes, those flashers are typically</p> <p>11 activated. I can't remember if they are</p> <p>12 automatically activated or if they have to be</p> <p>13 manually activated.</p> <p>14 Q What about the turn signals, where are</p> <p>15 those in relation to the hazard warning lights?</p> <p>16 A Well, just as they are in many</p> <p>17 vehicles, it's a multifunction lamp, so when the</p> <p>18 turn signal's activated, the flashers go off, and</p> <p>19 the turn signal for whatever direction is</p> <p>20 activated.</p> <p>21 Q Are they different colors, or are they</p> <p>22 the same color?</p> <p>23 A Well, again, with many vehicles it's</p> <p>24 the same color.</p> <p>25 Q So the left turn signal and the warning</p>	<p style="text-align: right;">Page 38</p> <p>1 evaluated, again, speeds of vehicles -- or of the</p> <p>2 implement and the vehicle, looked at some driver</p> <p>3 response issues, continued doing research.</p> <p>4 Q On Page 20 you list the cab and chassis</p> <p>5 weight of the RoGator at 27,600 pounds. What did</p> <p>6 you base that on?</p> <p>7 A Manufacturer's specification data.</p> <p>8 Q So it's your understanding that at the</p> <p>9 time of the accident, the RoGator was at least</p> <p>10 27,600 pounds unloaded?</p> <p>11 A I would expect if to be certainly in</p> <p>12 that neighborhood. I don't know if that</p> <p>13 incorporates a certain amount of fuel and</p> <p>14 operating liquids, but that's what the</p> <p>15 manufacturer's supply data indicated.</p> <p>16 Q It says you performed a line of sight</p> <p>17 analysis in this case; is that accurate?</p> <p>18 A Yes.</p> <p>19 Q Tell me about the conclusions you drew</p> <p>20 regarding line of sight for Mr. Gibson when he was</p> <p>21 in his vehicle?</p> <p>22 A Essentially, from the time Mr. Gibson</p> <p>23 crested the large hill immediately north of the</p> <p>24 intersection of Highway 98 and Highway 57, he</p> <p>25 would have had a -- or the ability to detect the</p>
<p style="text-align: right;">Page 37</p> <p>1 hazard lights are both yellow on the RoGator?</p> <p>2 A I believe so, amber, yes.</p> <p>3 Q And so if the hazard warning lights are</p> <p>4 on, both the right and left lights are blinking?</p> <p>5 And if the left turn signal is on, only the left</p> <p>6 blinker is blinking?</p> <p>7 A Correct.</p> <p>8 Q Do you know whether the left turn</p> <p>9 signal was ever used in this case?</p> <p>10 A I believe it was.</p> <p>11 Q Do you know when he turned on the left</p> <p>12 turn signal, and if so, what do you base that on?</p> <p>13 A I do not know specifically where</p> <p>14 Mr. Jensen activated the left turn signal. The</p> <p>15 only information I have is what he provided in his</p> <p>16 deposition testimony.</p> <p>17 Q So what steps, if any, did you take</p> <p>18 after you completed your investigation at the</p> <p>19 accident site prior to the time you actually</p> <p>20 issued your report?</p> <p>21 A We created a scale diagram, integrated</p> <p>22 the measurements from the Wayne County Sheriff's</p> <p>23 Department, integrated the positional information</p> <p>24 of the implement and the truck-tractor semitrailer</p> <p>25 based upon the photographic information,</p>	<p style="text-align: right;">Page 39</p> <p>1 presence of the RoGator implement by virtue of</p> <p>2 seeing either all or a significant portion of the</p> <p>3 rear structure of that implement.</p> <p>4 Q And just so the -- the record is clear,</p> <p>5 the kind of geography of this area -- what was the</p> <p>6 number of the highway south?</p> <p>7 A The east west highway I believe is</p> <p>8 Highway 98.</p> <p>9 Q So the intersection of Highway 98 and</p> <p>10 57, if you're going north on Highway 57, there's</p> <p>11 one larger hill, a smaller hill, and then the</p> <p>12 accident intersection; is that accurate?</p> <p>13 A Correct, you traverse a very</p> <p>14 substantial hill. You then go -- as you continue</p> <p>15 north, you go -- you descend that hill into a -- I</p> <p>16 don't want to say a shallow valley but a little</p> <p>17 more uniform terrain. And then you ascend a small</p> <p>18 hill. And on the north side of that hill was</p> <p>19 where the collision occurred.</p> <p>20 Q And so your first opinion regarding</p> <p>21 line of sight is that Mr. Gibson could have seen</p> <p>22 at least some portion of the RoGator when</p> <p>23 Mr. Gibson was reaching the top of the first hill</p> <p>24 going north?</p> <p>25 A Yes, from that distance, which is</p>

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<p style="text-align: right;">Page 40</p> <p>1 twenty-nine hundred and some feet from the impact 2 area, he would be able to see the rear structure 3 of the RoGator. 4 Q Any other conclusions you've drawn 5 regarding Mr. Gibson's line of sight as he 6 progressed toward the intersection? 7 A As he progresses towards the 8 intersection, as I try to demonstrate within the 9 report, it's virtually a continuous ability for 10 Mr. Gibson to detect the presence of the RoGator 11 as he continued towards the north. 12 Q What conclusions did you draw regarding 13 the line of sight for the RoGator looking 14 backwards? 15 A That is, I don't want to say, similar 16 because looking through rearview mirrors for any 17 driver provides a different perspective than 18 looking through the windshield. So the viewing 19 perspective is -- would be different for the 20 operator of the RoGator than it would be for the 21 operator of the Kenworth. 22 Q So if -- if Mr. Jensen's RoGator was 23 stopped -- let's assume it was stopped at the 24 intersection of Highway 357 and 857 road. At what 25 distance could he first see Mr. Gibson's semi</p>	<p style="text-align: right;">Page 42</p> <p>1 RoGator; is that accurate? 2 A Well, sort of. We used a surveying 3 stadia rod to establish the upper limits of the 4 RoGator implement. And then the stadia rod was 5 positioned at three different locations within the 6 northbound lane while I took photographs at 7 various positions to the south of the 8 intersection. 9 Q And the purpose of that was to 10 determine at what point Mr. Gibson could see the 11 RoGator as he approached from the south? 12 A Well, at what point could he detect the 13 presence of the equipment and additionally, as it 14 turned out, how much of the rear structure was 15 detectable. 16 Q Did you also perform the reverse of 17 that to determine what Mr. Jensen could have seen 18 looking behind him? 19 A No. 20 Q Why is that? 21 A First of all, we did not have specifics 22 as far as the mirror positioning on the equipment 23 because we hadn't examined any of the equipment at 24 that point. And secondly, it would -- it would be 25 -- I don't know if it would have been problematic</p>
<p style="text-align: right;">Page 41</p> <p>1 behind him had he looked in his mirrors? 2 A I don't recall Mr. Jensen testifying 3 that he saw the truck approaching. 4 Q My question is, based on your analysis, 5 if Mr. Jensen's vehicle is stopped on 857 road and 6 Highway 57, what distance could he have seen 7 Mr. Gibson's semi-truck behind him? 8 A Well, if we assume that hypothetical, 9 it could have been, estimate -- I'm going to 10 estimate right now six to eight hundred feet. 11 Q And is that to the crest of the hill 12 south of the intersection? 13 A That would be within that generalized 14 area, yes. 15 Q So what do you -- and what do you base 16 that calculation on? 17 A I'm just estimating based upon the 18 geometry of the roadway and terrain in that area 19 as well as the positioning of -- of the implement 20 at the intersection. 21 Q It's my understanding, when you were at 22 the site, you had someone kind of hold something 23 up in the air so you could take some pictures and 24 demonstrate exactly what it would look like as you 25 approached -- how far Mr. Gibson could see the</p>	<p style="text-align: right;">Page 43</p> <p>1 to recreate the height of his truck with -- with 2 what we had. 3 Q So I guess my -- is it true that you 4 did not perform the same kind of analysis and 5 testing to determine what Mr. Jensen could have 6 seen behind him as you did to determine what 7 Mr. Gibson saw in front of him? 8 THE DEPONENT: Sorry, could you repeat 9 that, please. 10 (Last question read.) 11 A Well, yes and no is the answer. To 12 some degree we did, but we did not -- I mean, the 13 documentation we did is indicative of that viewing 14 perspective but does not directly focus on that 15 viewing perspective. 16 Q (By Mr. Boyd) So would you say that 17 the times that Mr. Gibson could have seen 18 Mr. Jensen are not necessarily the times 19 Mr. Jensen could have seen Mr. Gibson, or are they 20 the same? 21 A In theory they may have been the same. 22 In reality, an operator or a driver of -- an 23 operator of a vehicle -- I'm sorry, an operator of 24 an implement or a driver of a vehicle does not 25 monitor a rearview mirror in the same manner as</p>

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<p style="text-align: right;">Page 44</p> <p>1 they look out a windshield. So that's the 2 difference.</p> <p>3 Q Sure. And I understand you're not 4 continuously looking in your rearview mirror, but 5 had Mr. Jensen looked in his rearview mirror at 6 any particular point, if Mr. Gibson could have 7 seen Mr. Jensen, is it true that Mr. Jensen had he 8 looked would have seen Mr. Gibson?</p> <p>9 A Possibly.</p> <p>10 Q So at the time immediately before 11 Mr. Jensen initiated his left-hand turn, had he 12 looked behind him, would he have been able to see 13 Mr. Gibson's semi-truck?</p> <p>14 A Possibly.</p> <p>15 Q Why do you say "Possibly" instead of 16 yes?</p> <p>17 A Again, because the geometric 18 configuration of looking out a rearview mirror is 19 different than looking out a windshield in front 20 of you.</p> <p>21 Q And what -- what calculations or tests 22 did you do to determine the differences for that 23 configuration, if any?</p> <p>24 A Well, I did not do any calculations. 25 The inspection of equipment indicated that --</p>	<p style="text-align: right;">Page 46</p> <p>1 fact, did look immediately before he began his 2 turn?</p> <p>3 A For example, if there was a slight 4 angularity of the equipment to the right of the 5 northbound lane, then his viewing perspective 6 would not incorporate either a portion of or all 7 of the northbound lane.</p> <p>8 Q Is that in the rearview mirror or the 9 side-view mirror or both?</p> <p>10 A I'm aware of -- well, it would be 11 applicable to all the mirrors.</p> <p>12 Q Could he have physically looked behind 13 him?</p> <p>14 A He would almost have to depart the cab 15 structure to look back just because of the 16 geometrics of the structure.</p> <p>17 Q So your thought is that if his vehicle 18 was facing angled towards the right, that may 19 explain why, if he did look in his mirror, it's 20 possible he may not have seen Mr. Gibson; is that 21 accurate?</p> <p>22 A That may be an explanation, yes.</p> <p>23 Q Do you have any reason why his vehicle 24 would be angled to the right if he was making a 25 left-hand turn?</p>
<p style="text-align: right;">Page 45</p> <p>1 indicated to me that that would be a true 2 statement or a correct statement.</p> <p>3 Q Meaning -- meaning you agree that had 4 he looked in his rearview mirror before he began 5 his left hand turn, he would have been able to see 6 Mr. Gibson's semi?</p> <p>7 A That he possibly could have seen it or 8 detected it.</p> <p>9 Q And the reason you say "possibly" is 10 because of the variables and angle of the rearview 11 mirror?</p> <p>12 A Yes, in -- in the structure of this 13 RoGator.</p> <p>14 Q Did you ever look inside the RoGator to 15 look at the configuration?</p> <p>16 A Yes, all three of them.</p> <p>17 Q Based on that configuration, if he had 18 looked behind him at the time before he started 19 turning left, would he have seen Mr. Gibson's 20 truck?</p> <p>21 A Again, my response would be possibly. 22 He testified that he looked twice, as I recall, 23 and did not detect the presence of the truck.</p> <p>24 Q What explanation can you provide as for 25 why he wouldn't have seen Mr. Gibson if he, in</p>	<p style="text-align: right;">Page 47</p> <p>1 A Well, again, I hope you did not 2 misunderstand me. It does not have to be at a 3 significant angle just because of the geometry of 4 the viewing perspective relative to the mirrors. 5 A very shallow angle could create that scenario.</p> <p>6 Q But you haven't done any calculations 7 or testing to determine what that angle would be 8 or if that angle was present in this case; is that 9 true?</p> <p>10 A I have not done any testing other than 11 my observations of the equipment and of the 12 structure of the hopper bin that's attached to the 13 RoGator in the mirrors.</p> <p>14 Q If Mr. Gibson or Mr. Jensen's vehicle 15 was straight and was not angled to the right, 16 would he have seen Mr. Gibson's semi had he looked 17 in his rearview mirror before beginning his turn?</p> <p>18 A I would answer that, again, possibly.</p> <p>19 Q Now, Mr. Sokol -- have you reviewed 20 Mr. Sokol's report in this case?</p> <p>21 A Yes.</p> <p>22 Q And we'll talk more about that later, 23 but his Conclusion No. 9 says, "Had Mr. Jensen 24 looked in his side mirrors prior to starting the 25 left turn he would have been able to see the</p>

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<p style="text-align: right;">Page 48</p> <p>1 approaching Gibson trailer." Do you agree with 2 that, disagree with that, or have no opinion on 3 that opinion? We can mark it, if you'd like. 4 A I do not believe that Mr. Jensen would 5 be able to see Mr. Gibson's trailer. 6 Q Is that as opposed to the -- to the 7 semi's cab itself? 8 A Yes. 9 Q If we change No. 9 to say would he have 10 been able to see the approaching Gibson 11 semi-tractor, would you agree with that 12 conclusion, disagree with that conclusion, or have 13 no opinion on the accuracy of that conclusion? 14 A If you change the wording of 15 Mr. Sokol's report to say truck-tractor, 16 semitrailer, again, my response would be possibly, 17 but that -- that's tempered with the idea that 18 based on the two mirror checks that Mr. Jensen 19 indicated in his testimony, at that point he 20 probably felt comfortable initiating the left 21 turn. 22 Q So you -- do you have any reason to 23 disagree with what Mr. Jensen testified regarding 24 the results of when he looked in the mirrors -- 25 A No.</p>	<p style="text-align: right;">Page 50</p> <p>1 inaccurate? 2 A No. 3 Q It's not possible that he looked and 4 did see the tractor? 5 A Well, if that, in fact, happened, I 6 would have expected him to have recalled that, but 7 I don't recall his testimony indicating that. 8 Q And it's possible he didn't look in his 9 mirrors at all. Would you agree with that? It 10 would be inconsistent with his testimony, but that 11 is certainly a possibility? 12 A I suppose it's possible, but it would 13 be inconsistent with his testimony. 14 Q Is it possible for you to tell me 15 definitively the location of -- of Mr. Gibson's 16 semi the first time Mr. Jensen would have been 17 able to see him had he looked behind him? 18 A If Mr. Jensen had checked his mirrors 19 at the point he was cresting the second smaller 20 hill -- 21 Q When you say "he," you mean Jensen -- 22 A Yes. 23 Q -- or Gibson? 24 A If Mr. Jensen had checked his mirrors 25 as he was traversing the smaller hill, he may have</p>
<p style="text-align: right;">Page 49</p> <p>1 Q -- based on your investigation? 2 A No. 3 Q Based on your investigation, are there 4 any portions of Mr. Jensen's testimony, in his 5 deposition, that you believe are inaccurate? 6 A Not really. People are not very good 7 at estimating time intervals, distances, speeds, 8 for example, based on my experience and some of 9 the other -- some published information about 10 that. 11 So when Mr. Jensen talked about being 12 stopped for up to 15 second, I think that's a 13 little bit long in time, but it -- whether he was 14 moving slowly for that time period or not, I don't 15 know, but I think that's a little bit long. 16 Q So that would be an unusual amount of 17 time to stop on the side of the road? 18 A Well, it would be an extended amount of 19 time if he were actually physically stopped, yes, 20 within the traffic lane. 21 Q Mr. -- Mr. Jensen testified that he did 22 look in his mirrors and did not see the Gibson 23 semi. Based on your answer that it's possible had 24 he looked he could have seen it, are you saying 25 it's possible that Mr. Jensen's testimony could be</p>	<p style="text-align: right;">Page 51</p> <p>1 seen Mr. Gibson in the back. 2 Q Can you tell me the location of 3 Mr. Jensen's vehicle at the time Mr. Gibson 4 crested the smaller hill? 5 A Well, not specifically because we have 6 some variability in the time interval and rate of 7 deceleration of Mr. Jensen's implement, possibly 8 some variability and more than likely variability 9 in how long he either paused, stopped, was moving 10 very slow prior to initiating his left turn. 11 And -- and thirdly, quite honestly, there's no way 12 to define this crest of the hill because it's -- 13 it's fairly modest in -- in its topographical 14 differences. So that's a long answer to, no, we 15 can't specify, because there are just too many 16 variables. 17 Q Can you describe for me the location of 18 Mr. Jensen's vehicle at the time he began to turn 19 left? Where was he on the roadway based on your 20 analysis? 21 A Within the intersection occupying 22 likely all of the northbound lane, possibly some 23 of the outside shoulder to his right. 24 Q So he was within the intersection at 25 the time he then began to start turning left? He</p>

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<p style="text-align: right;">Page 52</p> <p>1 didn't start to turn left as he left that 2 intersection, correct? 3 A Yes, I don't see a maneuver that most 4 people call a farmer's left turn. I don't see 5 that. 6 Q And describe what you mean by that. 7 A Where you have a very shallow diagonal 8 movement from -- in this case, from the northbound 9 lane making an entry into the county road on his 10 left. 11 Q Was there any traffic that you're aware 12 of coming southbound at the time Mr. Jensen 13 turned? 14 A No. 15 Q Page 35 of your report, you reference 16 3.7 feet. Can you tell me what that represents? 17 A The positioning of the area of impact 18 relative to the fog line or lane limit line that 19 is on the west side of Highway 57. 20 Q So that's the measurement from the fog 21 line to the front right tire of the semi-tractor 22 or the front left tire of the RoGator? 23 A It's referencing the RoGator. You can 24 see the tire scrub from the very near tire that's 25 on the RoGator.</p>	<p style="text-align: right;">Page 54</p> <p>1 he," meaning Mr. Gibson, "initiated any 2 significant slowing of the ground speed of his 3 northbound Kenworth truck." Could there be 4 significant slowing without physical evidence? 5 A Well, in theory there could be, yes. 6 Q And what would cause significant 7 slowing without leaving physical evidence like a 8 tire mark? 9 A Moderate to aggressive brake 10 application over a period of time. 11 Q What about letting up on the gas, would 12 that also -- would that create any physical 13 evidence? 14 A No, if you let off the throttle, you're 15 not going to create evidence, but you're not going 16 to get much slowing either. 17 Q So someone could let up on the throttle 18 and apply at least moderate braking pressure 19 without leaving any tire marks or physical 20 evidence; is that true? 21 A In theory, yes. 22 Q Why do you say, "In theory"? 23 A Well, again, in this particular case, 24 if that had occurred, let's say he slowed down to 25 35, 40 miles an hour instead of 60, then you have</p>
<p style="text-align: right;">Page 53</p> <p>1 Q So the 3.7 feet is from the fog line to 2 the center line of the left front tire of the 3 RoGator or for the edge of the -- 4 A Well, it's to the inside -- what I call 5 the inside edge because the -- the tire is 6 basically undergoing a transformation due to the 7 outside forces during the collision. So it's 8 creating a scrub mark. And that event occurs over 9 a period of time. 10 Q On Page 35, second paragraph, you say, 11 "the RoGator implement" -- "the RoGator implement 12 underwent a counter-clockwise rotational 13 movement." Can you explain to me how that 14 happened? 15 A Oh, that should be clockwise. Yes, 16 that would be clockwise, I'm sorry. 17 MR. GOYETTE: Can we take a break? 18 MR. BOYD: Yeah, absolutely. 19 (Recess from 3:13 p.m. to 3:19 p.m.) 20 MR. BOYD: Back on the record. 21 Q (By Mr. Boyd) Mr. Wheat, looking at 22 your report, which is Exhibit No. 2 -- 23 A Uh-huh. 24 Q -- Page 37, first paragraph, you say, 25 "There was no physical evidence indicating that</p>	<p style="text-align: right;">Page 55</p> <p>1 that 160 feet of pre-impact skid marks, and that 2 number may be wrong -- 3 Q I think 150. That's on 37 also. 4 A No, he's within 150 feet of the 5 eventual collision location. There was -- I don't 6 remember the number, but there was a distance of 7 pre-impact skid by the truck-tractor semitrailer. 8 And at lower speeds, that distance of skid would 9 result in even further deceleration of the 10 Kenworth truck-tractor and semitrailer to the 11 point that when we have impact, the severity of 12 the impact collision would be less, and the 13 post-impact travel of the vehicle -- of the 14 Kenworth truck-tractor and semitrailer would have 15 been substantially less. So that's the reason I 16 used the phrase "In theory" in response to your 17 question because the -- the physical evidence we 18 do have on this particular crash clearly indicates 19 to me that that event or response did not happen. 20 Q Is it your opinion that Mr. Gibson did 21 not brake at all until the beginning of the skid 22 marks? 23 A Yes, I don't see any -- any evidence of 24 substantial response to the presence of the 25 RoGator that resulted in any adjustment of his</p>

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<p style="text-align: right;">Page 56</p> <p>1 driving as he approached. This is unfortunately a 2 classic situation where he is quickly closing in 3 on the slower moving RoGator before there's any 4 evidence of a -- of a driving response. 5 Q Based on the physical evidence and the 6 direction of the tire marks, do you believe that 7 Mr. Gibson started to move to the left before he 8 began applying his brakes? 9 A The -- the roadway evidence would 10 suggest it was probably -- a steering input was 11 probably occurring very close in time to the 12 application of the brakes. I do not see any 13 evidence that this was a -- a situation where you 14 have a -- I'll call it normal lane change that you 15 would go through in overtaking another vehicle. 16 Q So do you believe Mr. Gibson was 17 entirely within the right-hand lane at the time he 18 perceived the RoGator as a danger? 19 A More than likely he was in the 20 northbound lane, yes. 21 Q It's your opinion that Mr. Gibson did 22 not start to move over into the left lane any 23 material time before he also started applying his 24 brakes? 25 A The curve linear nature of the tire</p>	<p style="text-align: right;">Page 58</p> <p>1 And therefore the tire mark evidence 2 that we have here would be a whole lot -- would be 3 different in its placement and configuration other 4 than what we have. So that all tells me that he 5 was not making a lane change. 6 Q And what is that you're referring to? 7 A Oh, published studies related to trucks 8 making lane changes. 9 Q Can you be any more specific on that 10 study that you recall? 11 A Oh, there's several of them out there. 12 One was done several years ago by Andrews and 13 Dippel, D-i-p-p-e-l. Grimes, G-r-i-m-e-s, did one 14 for lane changes or not for trucks. But there's 15 several of them out there. 16 Q And did you discuss the timing for a 17 lane change in your report and how that influenced 18 your opinions in this case? 19 A I don't think I talked about lane 20 changes other than on Page 39 I basically talked 21 about my analysis of the dynamics of Mr. Gibson's 22 truck. 23 Q So it's your testimony that you believe 24 Mr. Gibson did not detect the RoGator before he 25 began applying his brakes?</p>
<p style="text-align: right;">Page 57</p> <p>1 mark evidence he created with his vehicle would 2 suggest he was within the northbound lane most of 3 that time. 4 Q And what do you mean by "most of that 5 time"? 6 A His detection and response to the 7 hazard that was now in front of him was such that 8 he was traveling in the northbound lane and was 9 not in the -- not making a, I'll call it, typical 10 passing maneuver. 11 Q And what tells you that it wasn't a 12 typical passing maneuver? 13 A Well, studies have shown that a lane 14 change by a commercial motor vehicle at highway 15 speeds typically takes on the order of, I'll call 16 it, I think, four to six seconds, as I recall, at 17 a minimum. 18 Your normal lane change, for example, 19 on the interstate or state highways are typically 20 more in the five-, six-, seven-, eight-second 21 range. So if that were the case, two things would 22 happen. One is Mr. Gibson would clearly be 23 traveling northbound in the southbound lane. His 24 lane position would be, I'll call it, centered 25 within the southbound lane as he proceeded north.</p>	<p style="text-align: right;">Page 59</p> <p>1 A Well, the response that we see in 2 braking and steering by Mr. Gibson is a function 3 of him detecting the vehicle, so your question was 4 a little bit skewed. 5 Q So what's your opinion regarding the 6 first time he detected the RoGator? 7 A Well, his position is obviously on the 8 north side of that very gradual hill. He's on the 9 downhill grade. And he was within 150 feet 10 because we do not see evidence of braking action 11 on -- or from his truck-tractor until the front of 12 his Kenworth was within approximately 150 feet of 13 the eventual collision. 14 Q So tell me more about that 150 feet. 15 What is that 150 feet representing? 16 A Essentially from the front of the 17 Kenworth to the area where the collision happened. 18 Q And what do you base that on? 19 A That's just the positioning of the 20 vehicles on a scale diagram. 21 Q Is the 150 feet from the point of 22 impact to the front of the tractor -- the 23 semi-tractor or 150 from the point of impact to 24 the start of the dual tire marks? 25 A Front of the truck-tractor.</p>

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<p>1 Q Your report talks about 2 perception-response time, is that right, on 3 Page 37? 4 A Yes. 5 Q Do you agree with the 6 perception-response time that Mr. Sokol used? 7 A Well, he assumed a value of 1.5 8 seconds, and I used a scientific method to 9 determine what other drivers who have been 10 exposed to a similar situation, what their 11 response time was. So I came up with a shorter 12 time interval. 13 Q Is that approximately 1.1 to 14 1.2 seconds? 15 A Correct. 16 Q We're talking about a .3 to .4 second 17 distance between the amount that Mr. Sokol assumed 18 than the amount that you calculated; is that 19 accurate? 20 A Yes. 21 Q And tell me -- tell me the methodology 22 you used to calculate that time. 23 A Again, I used the IDRR program to 24 evaluate that. And that utilizes published 25 research and testing results related to human</p>	<p>1 Q And what do you base that on? 2 A It's been peer reviewed multiple times 3 in publications. It's been -- it's utilized by a 4 substantial number, several hundred, forensic 5 reconstructions and collision analysts mostly in 6 North America but some throughout other parts of 7 the world. 8 Q Did the difference in the perception 9 times that you calculated versus the time 10 Mr. Sokol used, did that difference have an impact 11 on your opinions in this case? 12 A Well, in the big scheme of things, not 13 really. Both Mr. Sokol and I have concluded that 14 Mr. Gibson didn't do anything until he was within 15 a few seconds of the collision. The pre-impact 16 skid time was, I believe, less than two seconds. 17 So if you add the response time of braking to the 18 detection perception time, again, of either 1.1 or 19 1.5 seconds, in essence, Mr. Gibson's on top of 20 this thing before he does anything. 21 Q Do you have to account for -- you have 22 the -- you have the response time. Then you have 23 the time of the response before the impact. Do 24 you have to account for any other time period 25 where the driver had detected it but the vehicle</p>
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<p>1 factors, applications with driving. And it 2 evaluates the scenarios that are analogous to the 3 events in this collision. 4 Q So tell me what you input into that 5 software in order to give you those times. What 6 do you plug in in order to get the 1.1 and 7 1.2 seconds? 8 A It evaluates daytime versus night 9 driving, actual driving versus using a simulator, 10 configuration of roadway, whether the driver was 11 using a cell phone, are we looking at response or 12 detection and response time intervals, 13 eccentricity, the -- I think I mentioned geometry, 14 whether there was one or more than one hazard, 15 whether there were lights or flashers on the lead 16 vehicle. 17 Q And so you input that information, and 18 it does some sort of calculation and spits out 1.1 19 and 1.2 for perception time? 20 A That's a very generalized way of saying 21 it, but yes. 22 Q Is the IDRR program accepted, in your 23 field, as a reasonable approximation of perception 24 time? 25 A Yes, it is.</p>	<p>1 hasn't actually started braking yet? 2 A Yes. 3 Q Can you explain that? 4 A Well, in a commercial motor vehicle, 5 that is sometimes called brake lag time. And that 6 by regulation has to be less than -- I believe 7 it's a third of a second, roughly. So yes, that's 8 incorporated into the analysis. 9 Q And what regulation are you referring 10 to? 11 A Federal Motor Carrier Safety 12 Regulations relating to brakes. And it's also 13 incorporated into Title 49, Code of Federal 14 Regulations Part 3. It's either 390 or 393 -- no, 15 I'm sorry -- no, it's 49 CFR. It's 121 is the 16 braking system. And I don't remember if it's 17 390.121 or 393.121. 18 Q Did you conduct any analysis, in this 19 case, for the time lag for the time Mr. Gibson 20 would have been applying the brakes to when the 21 physical evidence would have started? 22 A Okay. From the time he puts his foot 23 on the brake treadle valve to the time we see 24 evidence on the road? 25 Q Correct.</p>

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<p>1 A In this situation, I would expect that 2 to be maybe a half a second interval total. 3 Q And what calculations did you perform 4 to determine that? 5 A Well, again, looking at the 6 requirements for brake lag time, we have, I'll 7 call it -- I don't want to say lightly loaded but 8 a moderately loaded trailer. It's on a downhill 9 grade, and so that rear axle brake on the trailer 10 is going to lock up really quick. 11 Q We talked about speed earlier. Do you 12 have any evidence that Mr. Gibson was exceeding 13 the posted speed limit? 14 A No. 15 Q Okay. You talk on Page 38 about -- you 16 say, "Statutes in Nebraska and in Colorado 17 prohibit the overtaking/passing of another vehicle 18 on a two-lane highway within an intersection." 19 A Correct. 20 Q Did you review the statutes in Nebraska 21 on that? 22 A Yes. 23 Q Are there any exceptions to that rule? 24 A I'm not recalling any. I can look it 25 up if you want me to.</p>	<p>1 of the road, some more specific than others, and 2 as such would have the rights of the operator of a 3 vehicle when utilizing public roads. So in 4 essence what you're saying is that if you call the 5 RoGator implement an obstruction, then it's no 6 different than any other motor vehicle that's 7 using the road. 8 Q Can a motor vehicle ever be an 9 obstruction? 10 MR. GOYETTE: I'm going to object to 11 form and foundation. 12 A If it is disabled, I suppose it could 13 be an obstruction. If it's involved in a 14 collision, it could be an obstruction. 15 Q (By Mr. Boyd) If a vehicle is stopped, 16 not disabled, it could move, but it doesn't, and 17 it's in the lane of traffic, could that be an 18 obstruction? 19 A No. 20 Q What makes a disabled vehicle in the 21 road an obstruction but a non-disabled vehicle 22 still not moving not an obstruction? 23 A Because there are many circumstances 24 where a motor vehicle or piece of equipment may be 25 stopped or moving slowly while on the roadway and</p>
Page 65	Page 67
<p>1 Q Why don't you go ahead. If you have 2 them with you, why don't you go ahead and look it 3 up. 4 A And you're asking me if there are any 5 exceptions to overtaking another vehicle traveling 6 in the same direction within an intersection? 7 Q Correct. 8 A Well, there's an exception if there's 9 two or more lanes of travel in each direction if 10 the driver of the vehicle's overtaking a bicycle 11 or electric personal assistive mobility device. 12 Q I guess maybe I'll clarify. Is there 13 an exception for obstructions in your lane? 14 A I'm not -- in my quick review, I did 15 not find anything related to that. 16 Q If there is an exception for 17 obstructions, would there have been an obstruction 18 in this case? 19 A No. 20 Q Why not? 21 A The implement is not an obstruction. 22 It's a piece of equipment that is authorized -- or 23 not -- it's not prohibited to use on public 24 highways. And as an implement of husbandry, it's 25 required to -- it's required to follow the rules</p>	<p>1 in response to the driver or as a result of the 2 driver's actions or operator's actions of that 3 equipment or motor vehicle, and unless it's 4 unlawful, it places a responsibility on other 5 vehicles to accommodate the traffic situation that 6 is occurring in front of them. 7 Q Would it have been lawful for 8 Mr. Jensen to stop his RoGator on the road for 15 9 seconds partially on the road and partially off 10 the road without any traffic coming southbound? 11 MR. GOYETTE: I'll object, form and 12 foundation. 13 A Well, again, your question assumes that 14 time interval, and we talked about that, whether 15 that's accurate or not. 16 Q (By Mr. Boyd) Sure, I understand. 17 A Your question partially suggests that 18 it's partially on the road and partially off the 19 road, but due to its size, it is wider than the 20 laneway and by statute is authorized, as I recall, 21 to use the shoulder. And in this particular 22 location, the asphalt surface extends out from the 23 travel lane by virtue of the presence of the 24 intersection. 25 Q If we disregard the location of the</p>

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<p style="text-align: right;">Page 68</p> <p>1 RoGator and we assume he was stopped for 15 2 seconds in the lane of traffic, is that lawful, in 3 your opinion, with no vehicles coming southbound? 4 MR. GOYETTE: Object, form and 5 foundation. 6 A Well, your hypothetical assumes that no 7 other event is occurring. There may be other 8 reasons why an operator or a driver would stop 9 their vehicle. 10 Q (By Mr. Boyd) Such as? Are there any 11 such circumstances in this case? 12 A As it turns out, we know that there are 13 none, but from Mr. Gibson's standpoint, he doesn't 14 know that. So he has the obligation to 15 accommodate the equipment or vehicles or bicycle 16 or whatever it is that's traveling in the same 17 lane in front of him. 18 Q So is it your understanding that there 19 was no lawful reason for Mr. Jensen to be stopped 20 for 15 seconds if he was, in fact, stopped for 15 21 seconds? 22 MR. BOYD: Same objection, form and 23 foundation. 24 A Well, there may have been. I don't 25 know.</p>	<p style="text-align: right;">Page 70</p> <p>1 A No, you do not always have an 2 obligation. You do have an obligation to safely 3 control your vehicle for the situation that is 4 occurring in front of you on the highway. 5 Q (By Mr. Boyd) So what kind of 6 situations would they not have an obligation to 7 stop their vehicles, but instead they can do 8 something different assuming the piece of 9 equipment is stopped in front of them? 10 A I'm sorry, your question was what? 11 Q So if a semitruck sees a piece of farm 12 equipment stopped on the highway, you say they 13 don't always have an obligation to completely 14 stop. So what circumstances would they not have 15 an obligation to completely stop? 16 MR. GOYETTE: And again I'll object to 17 the form of the question for speculation. 18 A Well, in your hypothetical, I could 19 think of a situation where if a semitruck driver 20 slows down in the approach to the RoGator 21 equipment and then the operator of the RoGator 22 equipment, for example, would walk out from behind 23 the equipment and wave the truck driver around the 24 stopped piece of equipment, then he could -- the 25 truck driver could then, if it's safe to do so, go</p>
<p style="text-align: right;">Page 69</p> <p>1 Q (By Mr. Boyd) You're not aware of any? 2 A Yeah, I'm not aware that he was stopped 3 for 15 seconds. Again, I think that's a little 4 bit extended, but . . . 5 Q But if that's true, you're not aware of 6 any lawful reason for him to do so in this case? 7 A I am not aware of any statute in 8 Nebraska that would prohibit him from safely 9 assessing a situation with that type of equipment 10 prior to making a turn at an intersection. 11 Q Does stopping on a highway for 15 12 seconds increase the likelihood that an accident 13 is going to occur if there's no reason to be 14 stopped? 15 MR. GOYETTE: I'll object to form and 16 foundation. 17 A Potentially. 18 Q (By Mr. Boyd) If, for example, a 19 semitruck sees an agricultural piece of equipment 20 like a RoGator stopped in their same lane of 21 traffic, does that semitruck driver always have an 22 obligation to completely stop their vehicle behind 23 that piece of equipment? 24 MR. GOYETTE: Same objection, form and 25 foundation.</p>	<p style="text-align: right;">Page 71</p> <p>1 around or overtake the stopped equipment or 2 implement. 3 Q (By Mr. Boyd) Even if the implement 4 was stopped in an intersection? 5 A Oh, yeah, you could certainly develop a 6 scenario based on that hypothetical, yes. 7 Q Any other scenario besides a RoGator or 8 farm equipment operator physically signaled to the 9 semitruck driver to go around? 10 A You could develop a scenario where, 11 say, the implement is abandoned by the operator, 12 and then the truck driver could or any driver, for 13 that matter, could approach from the rear at a 14 slow speed, and if there's sufficient information 15 to ascertain that it's abandoned on the roadway, 16 then you could go around it at a slow speed. 17 Q Based on your investigation and review 18 of the evidence, had Mr. Jensen not turned but 19 instead stayed in his location, would this 20 accident have occurred? 21 MR. GOYETTE: I'll object, form and 22 foundation. 23 A Yeah, you can change the specifics or 24 facts and say, yeah, if either the operator or 25 driver had done something different, this would</p>

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<p style="text-align: right;">Page 72</p> <p>1 not have happened.</p> <p>2 Q (By Mr. Boyd) But based on where the</p> <p>3 point of impact was, had Mr. Gibson's vehicle</p> <p>4 traveled the way that it did in this case but</p> <p>5 Mr. Jensen had stayed in his initial starting</p> <p>6 location, would the accident have occurred?</p> <p>7 A Well, depending on what --</p> <p>8 MR. GOYETTE: Same objection.</p> <p>9 THE DEPONENT: I'm sorry.</p> <p>10 A Depending on what you assume, yeah, you</p> <p>11 could easily develop a scenario where no collision</p> <p>12 occurs.</p> <p>13 Q (By Mr. Boyd) Okay. Did Mr. Jensen</p> <p>14 need a CDL to operate that RoGator?</p> <p>15 A No.</p> <p>16 MR. GOYETTE: Object, form and</p> <p>17 foundation, calls for a legal conclusion.</p> <p>18 Q (By Mr. Boyd) And why do you say "No"?</p> <p>19 A An implement of husbandry -- they call</p> <p>20 it something different in Nebraska --</p> <p>21 Q (By Mr. Boyd) Well, first off, is that</p> <p>22 relevant to your opinions, in this case, whether</p> <p>23 he needed a CDL?</p> <p>24 A No, because it's an implement of</p> <p>25 husbandry or agricultural floater-spreader</p>	<p style="text-align: right;">Page 74</p> <p>1 definition of motor vehicle for purposes of</p> <p>2 licensing, not necessarily for the purposes of</p> <p>3 registration?</p> <p>4 A I consider licensing and registration</p> <p>5 the same thing.</p> <p>6 Q Are you aware of whether those statutes</p> <p>7 in Nebraska are the same?</p> <p>8 A I'm not familiar enough with the</p> <p>9 Nebraska statutes to comment on that.</p> <p>10 Q Would you be surprised if the Nebraska</p> <p>11 statutes regarding the definition of motor vehicle</p> <p>12 are not the same for registration as they are for</p> <p>13 licensing?</p> <p>14 MR. GOYETTE: Object to the form of the</p> <p>15 question. It's calling for a legal conclusion.</p> <p>16 A I have no idea.</p> <p>17 Q (By Mr. Boyd) Is the RoGator a farm</p> <p>18 tractor?</p> <p>19 MR. GOYETTE: Same objection.</p> <p>20 A I think -- I don't recall if the phrase</p> <p>21 farm tractor is defined or not. An implement of</p> <p>22 husbandry includes, A, a farm tractor with or</p> <p>23 without a towed farm implement, B, a</p> <p>24 self-propelled farm implement, C, self-propelled</p> <p>25 equipment designed and used exclusively to carry</p>
<p style="text-align: right;">Page 73</p> <p>1 implement. And as such, those pieces of equipment</p> <p>2 or implements are not classified as a motor</p> <p>3 vehicle and therefore are not classifiable as a</p> <p>4 commercial motor vehicle and are therefore not</p> <p>5 regulated under Federal Motor Carrier Safety</p> <p>6 Regulations.</p> <p>7 Q (By Mr. Boyd) Now, what Nebraska</p> <p>8 statute are you looking at to exclude the RoGator</p> <p>9 from the definition of motor vehicle?</p> <p>10 A It is -- I don't think I pulled the</p> <p>11 vehicle definition -- 60-303.</p> <p>12 Q Is that definition for the motor</p> <p>13 Vehicle Registration Act or for the Licensing Act?</p> <p>14 A You know, Nebraska statutes are a</p> <p>15 little bit puzzling to me in their layout and</p> <p>16 configuration, but I don't recall if that's --</p> <p>17 because some of those deal with registration and</p> <p>18 permitting and all that and so forth. But</p> <p>19 essentially farm implements are not considered</p> <p>20 motor vehicles, and therefore you don't have to</p> <p>21 have license plates. You don't have to have</p> <p>22 registration requirements. You don't have to have</p> <p>23 vehicle inspection requirements, which Nebraska</p> <p>24 doesn't have. So they're exempt from those.</p> <p>25 Q Are you telling us you reviewed the</p>	<p style="text-align: right;">Page 75</p> <p>1 and apply fertilizer, chemicals, or related</p> <p>2 products to agricultural soil or crops, D, an</p> <p>3 agricultural floater-spreader implement as defined</p> <p>4 in Section 60-303. And there's three other items.</p> <p>5 So the RoGator is not a farm tractor, as I would</p> <p>6 interpret this.</p> <p>7 Q (By Mr. Boyd) If the law provides that</p> <p>8 Mr. Jensen did need a CDL to operate the RoGator,</p> <p>9 we'll make that assumption for purposes of our</p> <p>10 discussion, would it concern you if he did not</p> <p>11 have a CDL?</p> <p>12 MR. GOYETTE: Object to the form of the</p> <p>13 question and foundation.</p> <p>14 A That would likely be a violation that</p> <p>15 the sheriff's department could take enforcement</p> <p>16 action on if they chose.</p> <p>17 Q (By Mr. Boyd) Is there training</p> <p>18 associated with obtaining a CDL in the state of</p> <p>19 Nebraska, do you know?</p> <p>20 A There is.</p> <p>21 Q Mr. Jensen -- do you know if Mr. Jensen</p> <p>22 had this training in this case?</p> <p>23 A I don't recall, from the materials I</p> <p>24 reviewed, that he had.</p> <p>25 Q It's your understanding he did not have</p>

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22 (76 - 79)

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<p>1 a CDL; is that correct?</p> <p>2 A I believe so. He did not.</p> <p>3 Q Do you know whether he could have</p> <p>4 obtained a CDL or whether he was disqualified from</p> <p>5 obtaining a CDL for any reason?</p> <p>6 MR. GOYETTE: I'll object to form and</p> <p>7 foundation.</p> <p>8 A I -- I don't have any information to</p> <p>9 comment on that.</p> <p>10 Q (By Mr. Boyd) If you're convicted of</p> <p>11 driving under the influence, would you be</p> <p>12 disqualified from obtaining a CDL for any period</p> <p>13 of time?</p> <p>14 MR. GOYETTE: Object to the form of the</p> <p>15 question as calling for a legal conclusion.</p> <p>16 A As I recall you would be disqualified</p> <p>17 if you were operating a commercial motor vehicle</p> <p>18 at the time of the offense.</p> <p>19 Q (By Mr. Boyd) And so it's your</p> <p>20 understanding if you got a DUI while not driving a</p> <p>21 commercial motor vehicle, you could still, then,</p> <p>22 obtain a CDL within six months?</p> <p>23 MR. GOYETTE: I'm going to object to</p> <p>24 the form of the question as calling for a legal</p> <p>25 conclusion.</p>	<p>1 Q Do you have any specialized education</p> <p>2 or training in the field of human factors,</p> <p>3 specifically?</p> <p>4 A Yes, I do.</p> <p>5 Q Any training or education that's not</p> <p>6 detailed in your curriculum vitae that we've</p> <p>7 already put into evidence -- or offered?</p> <p>8 A No, it's summarized within it.</p> <p>9 Q Is there any specific publications that</p> <p>10 you rely on in forming your human factor opinions</p> <p>11 in this case?</p> <p>12 A Those publications would be -- there's</p> <p>13 probably 15 or 20 of them that are utilized as the</p> <p>14 foundational data in evidence within the IDRR</p> <p>15 process. I can identify those if you'd like.</p> <p>16 Q So IDRR is -- that's what the program</p> <p>17 is that you used to determine perception-response</p> <p>18 time; is that correct?</p> <p>19 A Yes.</p> <p>20 Q So outside of determining what the</p> <p>21 perception-response time is, any other</p> <p>22 publications or data that you relied on to</p> <p>23 determine your human factors analysis in this</p> <p>24 case?</p> <p>25 A I don't know that I looked at any</p>
Page 77	Page 79
<p>1 A I -- I guess I'm not familiar enough</p> <p>2 with those regulations to answer that.</p> <p>3 Q (By Mr. Boyd) On Page 38 you talk</p> <p>4 about "human factors." Tell me what is</p> <p>5 encompassed within the term "human factors."</p> <p>6 A The application of the human to the</p> <p>7 driving task and operation of the vehicle or piece</p> <p>8 of equipment.</p> <p>9 Q And so how does the field of human</p> <p>10 factors relate to the opinions you've expressed in</p> <p>11 this case?</p> <p>12 A Because human factors, as it relates to</p> <p>13 accident investigation and reconstruction</p> <p>14 collision analysis, is one of the three major</p> <p>15 subjects that is encompassed within that forensic</p> <p>16 evaluation.</p> <p>17 Q So human factors are one of the types</p> <p>18 of factors that can cause an accident; is that</p> <p>19 true?</p> <p>20 A Yes.</p> <p>21 Q So in this case, you provided some</p> <p>22 opinions as to whether the human factors, as</p> <p>23 applied to Mr. Gibson, contributed to the cause of</p> <p>24 the accident?</p> <p>25 A Yes, I did.</p>	<p>1 specifically. They're listed on Page 42 of my</p> <p>2 report, some of the general references.</p> <p>3 Q And which of those have to do with</p> <p>4 human factor analysis?</p> <p>5 A Well, Ray Brach's, B-r-a-c-h, book</p> <p>6 talks about it to some extent. Traffic Accident</p> <p>7 Reconstruction by Fricke, F-r-i-c-k-e, and Baker,</p> <p>8 B-a-k-e-r, discusses it. A second text by Fricke</p> <p>9 discusses it. The Handbook of Human Factors in</p> <p>10 Litigation discusses it. I listed the AAA</p> <p>11 Foundation for Traffic Safety publication, and</p> <p>12 then the Human Factors Design Handbook.</p> <p>13 Q What are your opinions as far as the</p> <p>14 human factor analysis regarding Mr. Gibson?</p> <p>15 A Well, I can summarize them by saying</p> <p>16 that Mr. Gibson had an obligation to operate his</p> <p>17 commercial motor vehicle in a safe manner while</p> <p>18 traveling on a public highway. He failed to</p> <p>19 discern and detect, in a timely manner, the large</p> <p>20 farm implement traveling on the same highway but</p> <p>21 at a much slower speed and failed to maintain</p> <p>22 control of his vehicle while the farm implement</p> <p>23 was making a left turn at an intersection and</p> <p>24 while Mr. Gibson was proceeding through that same</p> <p>25 intersection. So those are all -- I mean, that</p>

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23 (80 - 83)

<p style="text-align: right;">Page 80</p> <p>1 summarizes the human factors analysis that I did. 2 Q What human factor analysis did you form 3 regarding Mr. Jensen in this case? 4 A That he was able to operate his 5 equipment in a controlled manner, that he had 6 slowed the implement down in the approach to the 7 intersection in a controlled manner, that he was 8 making a left turn at an intersection in a lawful 9 manner, that going from an asphalt -- a hard 10 asphalt bituminous asphalt surface onto a gravel 11 road would require a slow rate of speed, that the 12 oversized implement that he was operating would 13 require a slow rate of speed, in this 14 circumstance, to make a controlled left turn, and 15 that he testified that he checked his mirrors and 16 did not see any vehicles approaching from the 17 rear, and that he did not see any vehicles 18 approaching from the north. 19 Q Based on your investigation and 20 analysis, is there anything Mr. Jensen should have 21 done differently concerning his operation of the 22 RoGator on June 26, 2013? 23 A I don't believe so. I believe he 24 operated his vehicle in a reasonable manner -- or 25 operated his implement in a reasonable manner.</p>	<p style="text-align: right;">Page 82</p> <p>1 MR. GOYETTE: Objection, form, 2 foundation. 3 A If he knew that Mr. Gibson was 4 approaching at a high rate of speed and was not 5 going to detect and respond to the presence of the 6 RoGator and that Mr. Gibson would continue 7 operating his vehicle at a high rate of speed and 8 attempt to go around by overtaking and passing the 9 RoGator, then Mr. Jensen could not have -- you 10 know, could have stayed still and not made the 11 turn. 12 Q (By Mr. Boyd) What's the optimal 13 starting speed for a RoGator to make that turn? 14 A Well, the optimal starting speed would 15 be 1 mile per hour. 16 Q Why do you say that? 17 A Because typically with oversized high 18 center of gravity equipment, the slower the speed 19 you make a maneuver on a sloped surface going from 20 one surface material to another, the slower the 21 speed the better and safer. 22 Q So the slower the turn, the safer the 23 turn? 24 A Under those circumstances that were 25 present at this particular location, yes.</p>
<p style="text-align: right;">Page 81</p> <p>1 And he certainly had the right to expect that the 2 other users of the highway would operate their 3 vehicles in a safe and reasonable manner. 4 Q So based on your review of Mr. Jensen's 5 testimony, you believe every action he took that 6 day was appropriate in his operation of his 7 RoGator? 8 A I am pausing because I'm trying to 9 think of his entire deposition and how detailed an 10 analysis there was in the questioning of each and 11 every facet of the operation of his implement. I 12 don't know that I can answer that specifically. I 13 can say generally I believe he operated in a safe 14 and reasonable manner. 15 Q Is there a better way he could have 16 made that left turn, a safer way? 17 MR. GOYETTE: Object, form and 18 foundation. 19 A I suppose one could develop a scenario 20 in hindsight, but at the time and with the 21 information he had available, I would state that I 22 believe that his left turn maneuver was as safe as 23 could be under those circumstances. 24 Q (By Mr. Boyd) What in hindsight would 25 you have changed about it?</p>	<p style="text-align: right;">Page 83</p> <p>1 Q What's the optimal starting location 2 for a left-hand turn for the RoGator? 3 A At the point you've passed the center 4 point of the convergence of the two roadways. 5 Q Did Mr. Jensen start his left-hand turn 6 at the optimal point? 7 A We don't know specifically. We know 8 that he was in the area to the north of that 9 center line intersect, which is where you're 10 supposed to make a left turn. 11 Q So based on your understanding of that 12 fact, did he make the turn north of what the 13 optimal starting position would have been? 14 A Well, that intercept of the center 15 lines of the two intersections -- or two roadways, 16 he was north of there, but there's nothing to 17 prohibit using the balance of the intersection 18 geometry to make your turn. 19 Q I guess if we look at what the optimal 20 starting location is and what Mr. Jensen's 21 starting location is, those two would not be the 22 same starting location; is that accurate? 23 A No. 24 Q That's not accurate? 25 A No.</p>

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24 (84 - 87)

Page 84	Page 86
<p>1 Q He started his left-hand turn from the</p> <p>2 optimal location to do so, in your opinion?</p> <p>3 A No, I'm saying he was in the area where</p> <p>4 a vehicle operator or equipment operator would be</p> <p>5 expected to make a left turn.</p> <p>6 Q Is the area you're expected to make a</p> <p>7 left turn the same thing as the optimal location</p> <p>8 to make that left turn?</p> <p>9 A Could be.</p> <p>10 Q I guess I just want you to clarify for</p> <p>11 me. It's your opinion that Mr. Jensen did</p> <p>12 everything appropriate in this case and couldn't</p> <p>13 have made a better left-hand turn?</p> <p>14 A Well, in the scheme of things, that</p> <p>15 wouldn't have mattered because -- I mean, I know</p> <p>16 Mr. Sokol talked about that in his report, but</p> <p>17 what we don't know is whether there may have been</p> <p>18 some steering input by Mr. Jensen in a response to</p> <p>19 the air horn and flash that he saw. In other</p> <p>20 words, he could have easily steered to the right a</p> <p>21 little bit.</p> <p>22 And his making a left turn in that</p> <p>23 position is actually no different than a</p> <p>24 commercial motor vehicle, such as Mr. Gibson was</p> <p>25 driving, would have to oversteer the intersection</p>	<p>1 turn and its configuration or angularity at impact</p> <p>2 might be somewhat subjective, but they're</p> <p>3 certainly close.</p> <p>4 Q I guess I understand that you may draw</p> <p>5 different conclusions based on the drawings, but I</p> <p>6 just want to understand, do both of you generally</p> <p>7 agree that the positions stated in Figure D to his</p> <p>8 report are as they were at the time of the</p> <p>9 accident? And you may draw different conclusions,</p> <p>10 but the positions of the vehicles at the times and</p> <p>11 places stated in Figure D are generally accurate?</p> <p>12 A Yes, they're certainly reasonable. I</p> <p>13 mean, we're utilizing the same information and</p> <p>14 integrating the same factual information, so . . .</p> <p>15 Q Okay.</p> <p>16 (Exhibit 4 marked.)</p> <p>17 Q (By Mr. Boyd) Handing you Exhibit</p> <p>18 No. 4. Exhibit No. 4, is that Chapter 5 from a</p> <p>19 book that you have authored?</p> <p>20 A Yes.</p> <p>21 Q Give me a little bit of background</p> <p>22 about what this book is and why you wrote it.</p> <p>23 A I wrote it because I was asked to by</p> <p>24 the publisher. And when did I write this? 2005</p> <p>25 it was published.</p>
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<p>1 to make that left turn if you want to abide by the</p> <p>2 letter of the law, which I believe you are calling</p> <p>3 the optimal point of making the turn.</p> <p>4 (Exhibit 3 marked.)</p> <p>5 Q (By Mr. Boyd) I'm handing you what's</p> <p>6 been marked as Exhibit No. 3. Do you recognize</p> <p>7 this as Mr. Sokol's report that you reviewed in</p> <p>8 this case?</p> <p>9 A Yes.</p> <p>10 Q Would you review the figures attached</p> <p>11 to the back of his report regarding his opinions</p> <p>12 as to the location of the vehicles at different</p> <p>13 times?</p> <p>14 A As much as I could with the minute</p> <p>15 nature of the diagram.</p> <p>16 Q Based on your review, do you have any</p> <p>17 disagreements with the location of the vehicles,</p> <p>18 the times, and the distances stated in Mr. Sokol's</p> <p>19 figures attached to his report?</p> <p>20 A Well, Mr. Sokol went through the same</p> <p>21 process that we did as far as analyzing the</p> <p>22 physical evidence and placement of the vehicles</p> <p>23 and equipment relative to the collision dynamics.</p> <p>24 On Figure D, as in David, for example, the</p> <p>25 placement of the RoGator at the approach to the</p>	<p>1 Q Any material updates to this book since</p> <p>2 2005?</p> <p>3 A You mean if I made any updates to the</p> <p>4 book?</p> <p>5 Q Correct.</p> <p>6 A No.</p> <p>7 Q Okay. So everything in Chapter --</p> <p>8 everything in Exhibit 4 are -- they're your words.</p> <p>9 Would that be accurate?</p> <p>10 A Yes.</p> <p>11 Q Okay. And basically the book talks</p> <p>12 about the process for accident investigations; is</p> <p>13 that accurate?</p> <p>14 A Yes.</p> <p>15 Q I guess you would call it a training</p> <p>16 manual; is that accurate?</p> <p>17 A Yes.</p> <p>18 Q I've only been given Chapter 5 here,</p> <p>19 but obviously there are other chapters in the</p> <p>20 book. One of the parts that I didn't produce</p> <p>21 here, you have a statement in there that says,</p> <p>22 "You should be cautious when reviewing a police</p> <p>23 traffic accident report regarding an accident</p> <p>24 involving your company vehicle." Why do you say</p> <p>25 that?</p>

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25 (88 - 91)

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<p>1 A I don't --</p> <p>2 Q I have the whole book if you want to</p> <p>3 look at it.</p> <p>4 A Yeah, I don't remember the context in</p> <p>5 which I wrote that.</p> <p>6 Q You also say on Page 12, "The police</p> <p>7 may not have the same interest in or perspective</p> <p>8 toward the accident investigative results as your</p> <p>9 company." Do you recall what you're referring to</p> <p>10 there?</p> <p>11 A Oh, yeah, generally law enforcement,</p> <p>12 their primary goals are incident management,</p> <p>13 opening the highway back up to traffic movement,</p> <p>14 and whether or not a violation of the traffic</p> <p>15 statutes has occurred.</p> <p>16 Q Is it possible that police or</p> <p>17 investigating police departments may miss some</p> <p>18 physical evidence or may come to conclusions</p> <p>19 inconsistent with the physical evidence?</p> <p>20 A Yes.</p> <p>21 Q All right. Let's look at Exhibit 4.</p> <p>22 On Page 42, it's not Page 42 of the exhibit, but</p> <p>23 Page 42 of your book, it lists a "Table 5-1."</p> <p>24 Could you tell us what that table is intended to</p> <p>25 describe?</p>	<p>1 evidence that we had from the police photographs</p> <p>2 and police investigation and then the background</p> <p>3 information related to his employment and training</p> <p>4 and so forth suggests to me that he was capable of</p> <p>5 operating this equipment.</p> <p>6 Q The next box over, "Human" element</p> <p>7 "During Crash Event" is "Unfamiliarity with Area."</p> <p>8 Why would that be a relevant area?</p> <p>9 A Well, just as you mentioned before we</p> <p>10 started the deposition in your attempts to find</p> <p>11 parking, when you're unfamiliar with an area, you</p> <p>12 may be focused on a certain aspect of your trip or</p> <p>13 driving to the detriment of other aspects of the</p> <p>14 vehicle's movement.</p> <p>15 Q Did you analyze that factor in this</p> <p>16 case for either driver?</p> <p>17 A Yes. As I recall, Mr. Jensen had not</p> <p>18 been to this specific location. Mr. Gibson was</p> <p>19 familiar with the area, had delivered and</p> <p>20 traversed this area previously during his</p> <p>21 employment in Nebraska and had actually used that</p> <p>22 county road, I don't know if frequently, but</p> <p>23 several times apparently, so . . .</p> <p>24 Q So Mr. Gibson was familiar with that</p> <p>25 area, and Mr. Jensen was not? Is that accurate</p>
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<p>1 A In Table 5-1 I have listed several</p> <p>2 examples of factors relating to the human</p> <p>3 operation of vehicles, the vehicle itself, and the</p> <p>4 highway and atmospheric environment in which the</p> <p>5 vehicle is operated. And then I look at three</p> <p>6 time intervals, before the crash, during the</p> <p>7 crash, and after the crash.</p> <p>8 Q So are these different factors or</p> <p>9 elements that could contribute to the cause of a</p> <p>10 crash?</p> <p>11 A They're examples of factors that may be</p> <p>12 related to the occurrence of a crash.</p> <p>13 Q In the upper left box, so the human</p> <p>14 element "Before Crash Event" lists "Driver</p> <p>15 Inexperience." Why is that a relevant factor?</p> <p>16 A Because the operator of a vehicle may</p> <p>17 not have the knowledge of controls of the vehicle.</p> <p>18 They may have inexperience with a particular</p> <p>19 vehicle such as a rental car. And so that's one</p> <p>20 element that may need to be considered.</p> <p>21 Q Did you consider that element in this</p> <p>22 case?</p> <p>23 A Not really. I -- I evaluated it, but</p> <p>24 the description of that was offered by Mr. Jensen</p> <p>25 in how he operated the farm implement and the</p>	<p>1 based on your understanding of the facts?</p> <p>2 A To some extent, yes.</p> <p>3 Q Did Mr. Jensen's unfamiliarity with the</p> <p>4 area influence or affect his operation of the</p> <p>5 vehicle that day based on your understanding of</p> <p>6 the facts and your analysis?</p> <p>7 A Maybe.</p> <p>8 Q And why do you say "Maybe"?</p> <p>9 A It may have caused him to study the</p> <p>10 roadway upon which he was about to enter, that</p> <p>11 being County Road 857, a little bit longer than</p> <p>12 someone who was familiar with the road. But with</p> <p>13 an oversized piece of farm machinery that has a</p> <p>14 high center of gravity on a downhill grade and</p> <p>15 traversing different surfaces, that unfamiliarity</p> <p>16 actually assists a driver because they become a</p> <p>17 little more cautious in their approach and</p> <p>18 maneuvering.</p> <p>19 Q Is it your understanding that as he</p> <p>20 approached 857 road, he needed to make a decision</p> <p>21 between do I turn at 857 road, or do I turn at the</p> <p>22 next intersection farther down?</p> <p>23 A I'm not recalling that. I know it was</p> <p>24 discussed in deposition, but I'm not recalling it</p> <p>25 right now.</p>

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26 (92 - 95)

<p style="text-align: right;">Page 92</p> <p>1 Q If that -- if that is what the facts 2 are, that as he approached the intersection of 857 3 road he slowed or stopped for up to 15 seconds 4 while deciding whether he should turn at 857 road 5 or if he instead should turn at the next 6 intersection, would you attribute that to being 7 unfamiliar with the area? 8 A Not really. I could easily foresee a 9 situation where, I guess, the next intersection is 10 at the top of the other -- next hill, if that's 11 how I'm interpreting it, that even if you were 12 familiar with the location, you would want to 13 assess the county road, not only for your farm 14 implement but knowing that a truck would be 15 following you and would that truck be able to 16 maneuver that road in a safe manner and, you know, 17 those aspects of staging the implement with the 18 farm truck. 19 Q Below Table 5-1 in Exhibit 4, you talk 20 about a hypothetical accident situation where an 21 accident involves a fairly new employee to a 22 company who is involved in a traffic accident, and 23 you provide a list of questions that the company 24 may want to ask. What's the purpose of that line 25 of questioning?</p>	<p style="text-align: right;">Page 94</p> <p>1 training. 2 Q Do you know the answer to that question 3 in this case with Mr. Jensen? 4 A Only from the information provided in 5 depositions. 6 Q And do you have an understanding what 7 that training was? 8 A He had reviewed materials -- what was 9 it called -- spray application certification, 10 something along that line, passed the test on the 11 first time, was given on-the-job training with the 12 equipment and one-on-one training. 13 Q Do you recall how much training he had 14 using a RoGator in the field and how much training 15 he had using the RoGator on the public roads? 16 A I don't recall. 17 Q Would that be something you'd consider 18 relevant to this case? 19 A Possibly, not necessarily. 20 Q But you would advise a company to ask 21 what training did this driver have when he became 22 employed; is that accurate? 23 A If -- if the circumstances would 24 suggest that nature of inquiry. 25 Q And in a further bullet point down it</p>
<p style="text-align: right;">Page 93</p> <p>1 A To provide the safety supervisor or 2 risk management person or driver supervisor or 3 company staff to think of the bigger picture than 4 just the accident itself. 5 Q So the first question is "How long has 6 this driver been with the company?" Why would you 7 ask that question to a new employee that was 8 involved in an accident? 9 A You would ask that because you would 10 want to know, again, how long that person has been 11 exposed either to this particular location or to 12 the procedures of the company or to the equipment 13 or to a specific location. 14 Q Do you know what the answer to that 15 question is in this case with Mr. Jensen? 16 A I don't believe he had been to this 17 location before. I don't recall his duration of 18 employment with the company, several months, 19 something along that line. 20 Q No. 4 or Bullet Point No. 4, your 21 question is "What training did this driver have 22 when he became an employee?" Why is that a 23 relevant question to ask? 24 A Because the type of equipment or the 25 nature of the equipment may require specific</p>	<p style="text-align: right;">Page 95</p> <p>1 says, "Did the road test cover driving situations 2 similar to those that occurred during the accident 3 event?" Why is that question important to ask? 4 A Well, for example, if the road test 5 only covered rural areas and then you ask a driver 6 to make a delivery, for example, at this building 7 in downtown Denver, you may not have a good idea 8 if that driver is capable of maneuvering an 9 oversized vehicle in a congested traffic area, 10 whether they're capable of backing the equipment 11 into a loading dock and that type of thing. 12 Q You know what the answer to that 13 question is in this case? Did Mr. Jensen's road 14 test or training cover driving situations similar 15 to that that occurred during the accident event? 16 A Only what was provided in materials in 17 depositions. 18 Q So is it correct that you do not know 19 if his road test or road training covered driving 20 situations similar to that involved in the 21 accident event? 22 A I don't know if his road test or 23 driving experience while training included 24 approaching an intersection on a hill grade and 25 accommodating a commercial motor vehicle going</p>

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27 (96 - 99)

<p style="text-align: right;">Page 96</p> <p>1 60 miles an hour faster than you are trying to 2 pass you. I don't know if that training covered 3 that or not. 4 Q Do you know if his training covered 5 making left-hand turns on a public highway or at 6 all? 7 A I have no idea. I would imagine so 8 because a left turn is pretty common. 9 Q But you don't know? 10 A I don't know. 11 Q Page 43, the next page, the very first 12 bullet point you suggest asking, "Was this driver 13 given proper directions, or did the driver inquire 14 about possible routes to the customer location?" 15 Why would that be a relevant question to ask? 16 A Because in some locations, it's 17 preferable to approach a loading dock or a 18 customer's driveway in a certain manner to 19 facilitate entry. 20 Q Or a location to have more fertilizer 21 placed in your RoGator, would you call that kind 22 of a similar situation? 23 A I suppose you could construe it that 24 way, but . . . 25 Q Do you know the answer to that question</p>	<p style="text-align: right;">Page 98</p> <p>1 fatigue. 2 Q You know if any of that occurred in 3 this case with Mr. Jensen? 4 A I don't think he was experiencing any 5 marital problems that I know of. 6 Q Do you have any -- are there any 7 aspects of his life outside of his work that may 8 have contributed to his ability to operate his 9 vehicle or fatigue or mental condition in any 10 capacity? 11 A I know that was discussed in some of 12 the materials, but I didn't feel it was applicable 13 based on the evidence I saw. 14 Q So in this case you decided not to 15 investigate that question further; is that 16 accurate? 17 A I didn't see any reason to investigate. 18 I didn't see anything that suggested fatigue. 19 Q Do you know if he was taking any 20 medication at the time he was driving? 21 A I think he was on some medication. I 22 don't recall the specifics. 23 Q Can medication impact someone's ability 24 to operate their vehicle? 25 A Potentially.</p>
<p style="text-align: right;">Page 97</p> <p>1 in this case with Mr. Jensen? 2 A I think he was given specifics about 3 where the location for the application was. I'm 4 trying to think how else he was provided that. 5 I'm not recalling specifics of how he was given 6 directions. 7 Q You don't know whether or the extent 8 that he was given specific directions on where to 9 stop his vehicle so he could receive more 10 fertilizer? 11 A I don't recall that he was asked that 12 question in his deposition. 13 Q So do you know if he was given specific 14 instructions on where to stop his vehicle so that 15 the other truck could load more fertilizer into 16 his vehicle? 17 A No. 18 Q Next bullet point is, "Does this driver 19 have any hobbies, family situations, or outside 20 activities that may have caused unusual fatigue?" 21 Why would that be a relevant question? 22 A If a driver is, for example, 23 experiencing marital difficulties or an unsafe 24 living situation, that could affect your ability 25 to get sufficient sleep, and that may result in</p>	<p style="text-align: right;">Page 99</p> <p>1 Q Did you determine whether that was the 2 case for Mr. Jensen? 3 A No, I did not. 4 Q Page 47 on the same exhibit after the 5 bullet points, and I'll just read it here for the 6 record, you say, "Keep in mind that significant 7 evasive maneuvers do not always create physical 8 evidence on the pavement surface. Thus, the 9 absence of evidence of an evasive maneuver attempt 10 does not necessarily establish evidence of the 11 absence of an evasive maneuver attempt." Did I 12 read that correctly? 13 A Yes. 14 Q What are you trying to explain there? 15 A That many times a maneuver can be made 16 and create no physical evidence, but the lack of 17 evidence of a maneuver does not indicate that it 18 was not made. 19 Q In the next paragraph you say, "a 20 driver may aggressively slow the vehicle by 21 braking, but not leave any tire marks." Is that a 22 further explanation of the prior sentence we 23 discussed? 24 A It's an example of the prior sentence. 25 Q You also say that another example would</p>

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<p>1 be "A swerve to avoid a hazard, such as an animal 2 in or near the traffic lane, may not create tire 3 marks"; is that accurate? 4 A Yes, you read it accurately. 5 Q You say, "For those type of evasive 6 maneuver incidents, repetitive mathematical 7 calculations may need to be performed, utilizing 8 reasonable value ranges for perception, reaction, 9 deceleration, acceleration, and/or swerving." Did 10 those type of calculations apply in this case? 11 A Do they apply? 12 Q Did you need to create those kind of 13 mathematical calculations in Mr. Gibson's case? 14 A Yes. 15 Q And those are contained within your 16 report? 17 A They're summarized within the report, 18 yes. 19 Q And the last paragraph talks about an 20 example. And you say that "It is important to 21 know, however, that the actual braking process was 22 initiated prior to this location. Considering the 23 time and distance consumed by the commercial 24 vehicle from the initiation of pressure on the 25 brake, the time required to build system pressure</p>	<p>1 determine that? 2 A I looked at the type of load he had, 3 the setup of the trailer he was operating, the 4 grade of the roadway, and the aggressive nature of 5 his braking. 6 Q So did you use your judgment to come up 7 with that figure, or did you actually create a 8 calculation to tell you that number? 9 A I used my judgment. 10 Q With your expert disclosures, you 11 listed a series of cases that you've testified in 12 before, and I haven't marked those as an exhibit. 13 Which, if any, of those cases were any of your 14 opinions excluded by the court for any reason? 15 A None of them. 16 Q Is it your testimony that no court has 17 ever excluded any of your expert opinions for any 18 reason? 19 A You mean like a Daubert hearing? 20 Q Right. 21 A Correct. 22 Q Did you provide a report in the case of 23 Wade Buchanan, personal representative of the 24 Estate of Cynthia Pickering, a district court for 25 Wyoming?</p>
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<p>1 to effectively slow the vehicle, and then the 2 transition from rolling tires to fully sliding 3 tires on the vehicle, the commercial vehicle 4 initiated evasive action prior to the start of 5 tire marks shown on the photograph." Explain what 6 you're trying to describe to the reader. 7 A That depending upon how the brakes are 8 applied and the condition of the braking system, 9 that it -- that the activation of the brakes will 10 likely have occurred prior to the roadway 11 evidence -- 12 Q And -- 13 A -- existing. 14 Q -- then you say, "Studies have shown 15 that this time duration could be within a range of 16 approximately 0.25 to 1.5 seconds, depending on 17 the mechanical set-up and condition of the brake 18 system, vehicle design, loading considerations, 19 and pavement surface conditions." What 20 calculations or considerations did you use to 21 determine what that time was for Mr. Gibson's 22 vehicle? 23 A Yes, I -- we talked about this as being 24 approximately half a second. 25 Q And what calculations did you do to</p>	<p>1 A The name doesn't ring a bell. 2 Q So you don't recall providing a report 3 in that case? 4 A I don't recall the names. 5 Q Where the defendant was Charles Wilson, 6 as an employee, agent, or representative of 7 Mergenthaler Transfer and Storage Company, does 8 that refresh your recollection? 9 A If that's the report, I can look at it. 10 Q This is their motion in limine, but I'm 11 trying to figure out if you recall having a report 12 issued in that case and having it be excluded by 13 the trial court. 14 A Having the report excluded? 15 Q Your opinions excluded because they 16 lacked foundation on a reliable basis. 17 A Not to my knowledge. 18 MR. BOYD: Let's take a two-minute 19 break. I'm going to look at some documents. 20 (Recess from 4:50 p.m. to 4:55 p.m.) 21 Q (By Mr. Boyd) Do you recall the case 22 of Thompson against Stoll? 23 MR. GOYETTE: It was Thompson against, 24 I'm sorry? 25 MR. BOYD: Stoll, S-t-o-l-l.</p>

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<p style="text-align: right;">Page 104</p> <p>1 A Doesn't ring a bell.</p> <p>2 Q (By Mr. Boyd) Where all your opinions</p> <p>3 had been excluded because there wasn't enough</p> <p>4 physical evidence as to opine on the location of</p> <p>5 some vehicles?</p> <p>6 A Fill in some more blanks. I'm not</p> <p>7 recalling.</p> <p>8 Q Okay. Have you ever been retained by</p> <p>9 anyone to investigate an accident at all similar</p> <p>10 to this one?</p> <p>11 A I've done probably 10, 20 cases</p> <p>12 involving farm implements, pieces of equipment</p> <p>13 over the years. Overtaking or passing in an</p> <p>14 intersection occurs, I don't want to say</p> <p>15 frequently, but it's not unusual where it results</p> <p>16 in a collision.</p> <p>17 Q Have you ever represented the vehicle</p> <p>18 that was making the overtaking or passing</p> <p>19 maneuver?</p> <p>20 A I likely have.</p> <p>21 Q Do you recall any of those cases?</p> <p>22 A Not specifically.</p> <p>23 Q In each of those cases, did you find a</p> <p>24 reason why the accident was not caused by the</p> <p>25 person who was overtaking the other vehicle?</p>	<p style="text-align: right;">Page 106</p> <p>1 A I have no idea.</p> <p>2 Q You just don't have any recollection?</p> <p>3 A I'm sorry.</p> <p>4 Q Any reason you can think of why you</p> <p>5 would have found that it wasn't their fault?</p> <p>6 A It's a function of the circumstances</p> <p>7 and physical evidence and materials we can develop</p> <p>8 relative to the collision. Each collision is</p> <p>9 unique.</p> <p>10 MR. BOYD: I have no further questions.</p> <p>11 MR. GOYETTE: I will reserve my</p> <p>12 questions until the time of trial. So I don't</p> <p>13 have any questions. And Mr. Wheat, under Nebraska</p> <p>14 law, you have the right to read and sign. This</p> <p>15 has been a lengthy deposition. I suggest we</p> <p>16 exercise our right to read and sign.</p> <p>17 THE DEPONENT: I also do.</p> <p>18 MR. GOYETTE: Okay.</p> <p>19 (The deposition concluded at</p> <p>20 4:57 p.m., June 21, 2017.)</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>
<p style="text-align: right;">Page 105</p> <p>1 A I mean, each case is a little bit</p> <p>2 different; although, the general concepts are</p> <p>3 similar, so it's the specifics of a case, the</p> <p>4 specifics of driver response, the physical</p> <p>5 evidence that may or may not be available.</p> <p>6 Q Are there cases where there was a</p> <p>7 driver who was attempting to pass another vehicle</p> <p>8 at an intersection, a collision occurred, and you</p> <p>9 were representing the vehicle -- or retained by</p> <p>10 the people representing the vehicle who was making</p> <p>11 the overtaking maneuver?</p> <p>12 A I'm sorry, could you repeat that again?</p> <p>13 Q Sure. So I guess a case similar to</p> <p>14 this one to the fact that there was a vehicle who</p> <p>15 was attempting to pass another vehicle while the</p> <p>16 vehicle ahead of them was at an intersection, and</p> <p>17 you were retained by the people who represented</p> <p>18 the rear vehicle who made the passing maneuver?</p> <p>19 A And you're asking if I have been</p> <p>20 retained or if I had done that type of accident?</p> <p>21 Q On behalf of the driver of the vehicle</p> <p>22 who was making the passing maneuver.</p> <p>23 A I probably have.</p> <p>24 Q And did you opine that the accident was</p> <p>25 not their fault?</p>	

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1 STATE OF COLORADO)

2) ss. REPORTER'S CERTIFICATE

3 COUNTY OF DENVER)

4 I, Alan E. Bjork, do hereby certify that I
5 am a Certified Shorthand Reporter and Notary Public
6 within the State of Colorado; that previous to the
7 commencement of the examination, the deponent was
8 duly sworn to testify to the truth.

9 I further certify that this deposition was
10 taken in shorthand by me at the time and place herein
11 set forth, that it was thereafter reduced to
12 typewritten form, and that the foregoing constitutes
13 a true and correct transcript.

14 I further certify that I am not related
15 to, employed by, nor of counsel for any of the
16 parties or attorneys herein, nor otherwise interested
17 in the result of the within action.

18 In witness whereof, I have affixed my
19 signature this 5th day of July, 2017.

20 My commission expires July 8, 2019.

21

22

23

24

25

Alan E. Bjork, CSR
216 - 16th Street, Suite 600
Denver, Colorado 80202

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ACCIDENT RECONSTRUCTION SERVICES, INC.

Collision Analysis and Traffic Accident Reconstruction

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CURRICULUM VITAE

Arnold G. Wheat

Traffic Accident Reconstruction Specialist; ACTAR Registration No. 226

EXPERIENCE

1983 – Present	Accident Reconstruction Services, Inc. Reconstruction Specialist; Forensic Analyst
1975 – 1987	Arvada Police Department, Arvada, Colorado Accident Reconstruction Specialist (1979–1983)
1972 – 1975	State of New York; Buffalo, New York Police Officer and Criminal Investigator

Wheat
EXHIBIT
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AGREM BLANDO REPORTING

SPECIALIZED TRAINING

Specialized Training has been obtained in the following general subject areas since 1977

Automotive Collision Estimating Vehicle Damage Evaluation
Automotive Engineering and Design
Automotive Mechanics Vehicle Operating Systems
Biomechanics and Human Tolerance relating to Vehicle Crashes
Biomechanics of Impact Trauma Injury Cause Analysis Occupant Kinematics
Commercial Vehicle Accident Investigation and Reconstruction
Commercial Vehicle Brake Systems
Commercial Vehicle Safety Inspections Commercial Vehicle Post-crash Inspections
Computer Applications in Traffic Accident Reconstruction
Crash Scene Forensic Mapping with Theodolites and Total Station
Driver Safety Driver Distractions Driver Fatigue Traffic Safety
Forensic Photography Photogrammetry Techniques and Evaluation
Forensic Physics and Applied Physics in Accident Reconstruction
Highway Engineering Pavement Surface Treatments Pavement Surface Friction
Highway Work Zone Design and Site Supervision Incident Management on Highways
Human Factors related to Vehicle Operation Driver Perception, Reaction, Response
Investigation of Pedestrian- and Bicycle-Involved Traffic Crashes
Low Speed Rear-end Impacts and Contacts Traffic Accident Fraud Investigation
Motorcycle Accident Investigation and Reconstruction
Road Safety Audits Highway Safety Analysis
Rotational Mechanics Developed from Newton's Laws and Point Mass Mechanics
Seat Belt and Air Bag Restraint Systems ECM-SDM-OBC Vehicle Components
Technical Accident Investigation Commercial Motor Vehicle Dynamics
Technical Truck Accident Investigation
Tire Forensics Tire Failure Analysis
Traffic Accident Reconstruction Traffic Crash Cause Analysis
Traffic Engineering Traffic Signal Operation MUTCD Applications to Crash Reconstruction
U.S. DOT Commercial Vehicle Driver and Vehicle Inspection
Vehicle Dynamics Rollover Dynamics

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EDUCATION

1990 – 1991	Classes in Civil Engineering Metropolitan State College, Denver, Colorado
1972 – 1974	Bachelor of Science Degree, Major in Criminal Justice State University of New York, Buffalo, New York
1970 – 1972	Associate in Applied Sciences Degree, Major in Police Sciences Erie County Technical Institute, Buffalo, New York

COURT EXPERIENCE

United States District Courts, Colorado Division
United States District Court, Wyoming Division
First Judicial District, Jefferson County District Court, Colorado
Second Judicial District, Denver County District Court, Colorado
Fourth Judicial District, El Paso County District Court, Colorado
Fourth Judicial District, Teller County District Court, Colorado
Fifth Judicial District, Eagle County District Court, Colorado
Sixth Judicial District, LaPlata County District Court, Colorado
Seventh Judicial District, Gunnison County District Court, Colorado
Eighth Judicial District, Larimer County District Court, Colorado
Ninth Judicial District, Rio Blanco District Court, Colorado
Tenth Judicial District, Pueblo County District Court, Colorado
Twelfth Judicial District, Conejos County District Court, Colorado
Twelfth Judicial District, Saguache County District Court, Colorado
Thirteenth Judicial District, Morgan County District Court, Colorado
Thirteenth Judicial District, Washington County District Court, Colorado
Fourteenth Judicial District, Moffat County District Court, Colorado
Fourteenth Judicial District, Routt County District Court, Colorado
Fifteenth Judicial District, Prowers County District Court, Colorado
Sixteenth Judicial District, LaJunta County, Colorado
Seventeenth Judicial District, Adams County District Court, Colorado
Eighteenth Judicial District, Arapahoe County District Court, Colorado
Eighteenth Judicial District, Douglas County District Court, Colorado
Nineteenth Judicial District, Weld County District Court, Colorado
Twentieth Judicial District, Boulder County District Court, Colorado
Twenty-First Judicial District, Mesa County District Court, Colorado
Office of Administrative Courts, State of Colorado
Sixth Judicial Circuit Court, Pasco County, Florida
Seventh Judicial Circuit Court, St Johns County, Florida
District Court, Maui County, Hawaii
Third Judicial District, Owyhee County, Idaho
Fifteenth Judicial District, Thomas County, Kansas
Fort Peck Tribal Court, Montana
Tenth Judicial District, Fergus County, Montana
Thirteenth Judicial District, Yellowstone County, Montana
Nineteenth Judicial District, Lincoln County District Court, Montana
District Court, Kearney County, Nebraska

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COURT EXPERIENCE, cont'd

District Court, Keith County, Nebraska
District Court, Scotts Bluff County, Nebraska
Seventh Judicial Circuit, Pennington County, South Dakota
District Court, Shelby County, Tennessee
First Judicial District, Laramie County, Wyoming
Fifth Judicial District, Washakie County, Wyoming
Ninth Judicial District, Fremont County, Wyoming

MEMBERSHIPS AND ASSOCIATIONS

Accreditation Commission for Traffic Accident Reconstruction, Past Chairman
American Society of Safety Engineers
American Trucking Association, Competition Official (1989 – 2001), NTDC
American Trucking Association, Safety Management Council
Colorado Motor Carrier's Association, Safety Management Council
Commercial Vehicle Safety Alliance:
 Challenge Competition Official (2002 – 2005, 2015-2016)
National Safety Council
North American Transportation Management Institute, Adjunct Faculty
Professional Society of Forensic Mapping
Roads Scholar Recipient, COTIP, Colorado State University
Society of Accident Reconstructionists:
 Chairman 1986–1992 and 2004–present Secretary/Treasurer 1993–2003
Society of Automotive Engineers:
 Standards Development Committee – Accident Investigation and Reconstruction Practices
 Technical Paper Peer Review Committee – Accident Investigation and Reconstruction Practices
Southwestern Association of Technical Accident Investigators
Committee member for "*Minimum Training Criteria for Police Traffic Accident Reconstructionists*"
 U.S. Department of Transportation, National Highway Traffic Safety Administration
 Contract DTNH22–85–C–05120
Texas Association of Accident Reconstruction Specialists
Washington Association of Technical Accident Investigators
World Reconstruction Exposition (WREX) WREX2000® and WREX2016® – Executive Committees, Conference Staff

PROFESSIONAL PRESENTATIONS AND TEACHING EXPERIENCE

American Trucking Association, Motor Fleet Supervisors Annual Conferences; Central United States Region and Western United States Region
American Trucking Association; Western Regional Safety Rendezvous– Wyoming, Colorado
Arkansas Trucking Association
Arvada Police Department – Training Academy and FTO Program
California Trucking Association

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PROFESSIONAL PRESENTATIONS AND TEACHING EXPERIENCE, cont'd

Colorado District Attorney's Council
Colorado Law Enforcement Training Academy – Basic, Technical, and Truck Accident Investigation
Colorado Motor Carrier's Association
Consolidated Edison Company of New York
Food Distributors International
Hawaiian Bar Association, Lihue, Hawaii
IPTM, University of North Florida, Jacksonville, Florida
Iowa Motor Truck Association
Jefferson County, Colorado Patrol Commander's Association
Kansas Motor Carrier Association
Maine Motor Transport Association
National Private Truck Council
New York State Motor Truck Association
New York Times, Transportation Department
Rocky Mountain Institute of Transportation Safety– Colorado State University
Seattle University, Division of Continuing Education
Society of Accident Reconstructionists
Southwestern Association of Technical Accident Investigators
Tennessee Trucking Association
US DOT, Federal Motor Carrier Safety Administration; CAPE Seminars Colorado, Wyoming
Utah Motor Transport Association

TECHNICAL RESOURCE FOR NATIONAL MEDIA

Accident Reconstruction News; Vol. 7 No. 9; September 2005; "Portable Crash Scene Mapping Tools Prove Quick, Accurate, Economical"
CBS News – *48 Hours*; April 4, 2015; "An Accidental Husband" investigative report
Colorado Public Radio; March 4, 2014; *Colorado Matters*; "Pile-up on I-25 in Denver Causes Investigative Headaches"
Road & Track; July 9, 2013; "Anatomy of a High-Speed Crash"
Traffic Safety; National Safety Council; January/February 1994; "How to Keep Your Eyes on the Road"
Trucking News; September 2007; "Anatomy of an Accident"

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PUBLICATIONS

- "Accident Experience – Are New Entrant Motor Carriers Dangerous?"; *The SOARce*, Autumn 2000; Society of Accident Reconstructionists
- Accident Investigation Manual; ISBN 1-4018-6939-4; Delmar-Thompson Publishing Company, New York; 2004
- Advanced Motor Fleet Accident Investigation; NATMI Training Manual; 2003; co-author;
- "Application of the Clear Zone to Traffic Accident Reconstruction"; *The SOARce*, Spring 1999; Society of Accident Reconstructionists
- Co-Editor, *The SOARce* Magazine
- "Collision Analysis of Unique Roadways"; *The SOARce*, Winter 1997; Society of Accident Reconstructionists
- "Determination of Coefficients of Friction during Adverse Wintertime Highway Conditions"; Washington Association of Technical Accident Investigators/Society of Accident Reconstructionists Conference; July 1989; Seattle, Washington;
- "Did I Get Everything? Techniques, Tools and Tips to Improve the Quality of Your Highway Accident Investigations"; National Private Truck Council; April 2002; Austin, Texas
- "Documenting Vehicle Interiors in Post Crash Investigations"; Accident Reconstruction Journal; Vol 26, No. 4; July/August 2016; Waldorf, MD and WREX 2016, Orlando, FL
- "Effective Techniques to Document Highway Accidents"; Rocky Mountain Regional Safety Rendezvous, July, 2003; Breckenridge, Colorado
- "Incident Management Concerns for the Traffic Collision Investigator & Reconstructionist"; 2001 – *A Collision Odyssey Conference*; October 2001; Concord, California
- "Integrating Traffic Accident Investigation Techniques as a Tool Within a Risk Management Plan for Public Agencies"; IMSA Journal; New York; March 2012
- "Investigation and Reconstruction of Commercial Motor Vehicle Crashes"; Rocky Mountain Motor Vehicle Crash Reconstruction Conference; RMITS–Colorado State University; June 2000; Denver, Colorado
- "Investigation of Highway Construction–Work Zone Traffic Accidents"; Society of Accident Reconstructionists/Texas Association of Accident Reconstruction Specialists Annual Conference; October 1991; Orlando, Florida
- "Investigation of Highway Crashes Involving Commercial Motor Vehicles"; *Size Matters for Safe Driving* traffic safety task force; Colorado Department of Transportation and Colorado Motor Carrier Association; August 2005
- "Investigative Considerations for Work Zone Traffic Accidents"; Southwestern Association of Technical Accident Investigators; November 1994; Reno, Nevada
- "Is a Protocol for Measuring Aged Retroreflective Sheeting Warranted?"; co-author; Transportation Research Board Publication 17-06767; January 2017
- "Is Your Vehicle Spec Program Adversely Affecting Your Safety Program?"; Motor Fleet Monthly; NATMI; October 2011
- Motor Fleet Traffic Accident Investigation; NATMI Training Manual; 2003; co-author;
- "Overview of Accident Investigation"; Rocky Mountain Regional Safety Rendezvous, July, 2008; Steamboat Springs, Colorado
- "Qualifications of the Reconstructionist: Differing Points of View"; SAE-Society of Automotive Engineers, Publication #941053; March 1994; Detroit, Michigan
- "Reconstruction of Accidents on Unimproved Roads"; *The SOARce*, Spring 1996; Society of Accident Reconstructionists

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PUBLICATIONS, continued

"Reconstruction of Traffic Accidents Involving Visibility Issues"; *The SOARce*, Autumn 1999;
Society of Accident Reconstructionists

"Rural Road Safety"; *The SOARce*, Winter 2000; Society of Accident Reconstructionists

"Techniques Using the Total Station and other Electronic Measuring Instruments"; *2001 – A
Collision Odyssey Conference*; October 2001; Concord, California

"The Documentation of Vehicle Interiors during Post-Crash Investigations"; WREX2016 - IFT
Presentation; World Reconstruction Exposition, Orlando, FL; May, 2016

"Use of Black Boxes in Highway & Off-Road Vehicle Crashes"; Rocky Mountain Oil & Gas
EHS Group; July, 2008; Denver, CO

"Vehicle Data Resources; Society of Accident Reconstructionists Annual Conference;
August 1995; Charlottesville, Virginia

"What's In Your Accident Investigation Toolbox?"; *Motor Fleet Monthly*; NATMI; July 2002

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Preliminary Collision Reconstruction & Analysis

Gary Gibson, Jr. and Shawna Gibson v. Farmers' Co-operative
United States District Court, District of Nebraska
Case No.: 8:16-cv-296
April 3, 2017

Client:

Mr. Randall L. Goyette
Attorney at Law
Baylor, Evnen, Curtiss,
Grimit & Witt, L.L.P.
1248 O Street Suite 600
Lincoln, NE 68508

Wheat
EXHIBIT 2
6-21-17 GEB
AGREN BLANCO REPORTING

Assignment Overview

Our firm has developed information and completed an initial collision reconstruction and analysis of a motor vehicle traffic accident that occurred on Wednesday, June 26, 2013, at approximately 3:37 p.m. The accident happened at the intersection of County Road 857 with Nebraska State Highway 57 in a rural portion of Wayne County, Nebraska. A 2006 Kenworth® T600 truck tractor and attached Manac® drop-deck semi-trailer operated by Gary Gibson, and a 2007 AGCO "RoGator®" fertilizer spreader operated by Brieson Jensen, were involved in the accident event. Officers from the Wayne County Sheriff Department investigated the collision.

This report summarizes the initial observations, opinions and findings developed by Arnold Wheat and David Lohf during the preliminary forensic evaluation and reconstruction of the collision. The preliminary observations, opinions and findings stated throughout this report were made within a reasonable degree of probability, utilizing the scientific field of traffic accident reconstruction.

Analyst's Background

Arnold Wheat has more than 40 years' experience in the field of Traffic Accident Investigation and Reconstruction. His professional experience background in law enforcement includes employment as a police officer with the Arvada (Colorado) Police Department and the State of New York. He has received judicial approval to offer expert witness testimony in the areas of Traffic Accident Investigation and Reconstruction in U.S. District Courts and numerous judicial districts throughout Colorado, Florida, Hawaii, Kansas, Montana, South Dakota, Nebraska, Tennessee and Wyoming. Mr. Wheat has authored the book, Accident Investigation, co-authored two additional instructional manuals and has published numerous technical articles related to traffic accident investigation and collision reconstruction.

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Mr. Wheat has taught courses in Accident Investigation and Reconstruction for many law enforcement and transportation-related organizations in the United States, Canada and Mexico, including the American Trucking Association, the Rocky Mountain Institute for Transportation Safety, the Colorado Motor Carrier Association, the Institute of Police Technology and Management, the North American Transportation Management Institute and the Society of Accident Reconstructionists. He is past Chairman of the Accreditation Commission for Traffic Accident Reconstruction (ACTAR), and was a participant on the National Highway Traffic Safety Administration's (NHTSA) Task Force on *"Minimum Training Criteria for Police Traffic Accident Reconstructionists"*. As the current Chairman of the Society of Accident Reconstructionists (SOAR), Mr. Wheat serves as an editor and contributor to the quarterly magazine, *The SOARce*, an instructional publication for accident investigators and reconstructionists.

David Lohf also has approximately 40 years' experience in traffic accident investigation and reconstruction, beginning his professional career in law enforcement as a Trooper with the Colorado State Patrol, and rising through the ranks to retire as Troop Commander. His extensive knowledge of traffic accident investigation and reconstruction was obtained by investigating or supervising the investigation of more than 5,000 traffic accidents that occurred in both urban and rural locations. Mr. Lohf's instructional credentials include classes in Basic Accident Investigation, Technical Accident Investigation and Truck Accident Investigation for the Colorado State Patrol and the Colorado Law Enforcement Training Academy, as well as classes in Motor Fleet Traffic Accident Investigation for the North American Transportation Management Institute. He is accredited as a traffic accident reconstructionist through the Accreditation Commission for Traffic Accident Reconstruction (ACTAR), and has been designated an expert witness in Traffic Accident Investigation and Reconstruction in District Courts within Colorado, Nebraska and Ohio. As past Chairman of the Society of Accident Reconstructionists (SOAR), Mr. Lohf serves as an editor of the quarterly accident investigation publication, *The SOARce*.

Further information relating to Mr. Wheat and Mr. Lohf can be viewed within their respective Rule 26(a) disclosures.

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Documents Reviewed and Developed During Analysis

At this point in our initial investigation of the traffic accident, we have reviewed and/or developed the following documents and information:

- State of Nebraska Investigator's Motor Vehicle Accident Report
- State of Nebraska Investigator's Supplemental Truck and Bus Accident Report
- Interview with the investigating officer, Deputy Jesse Frank of the Wayne County Sheriff Department
- Printed transcripts, with exhibits, of the Sworn Depositions of
 - Gary Gibson, Jr., taken on December 29, 2016
 - Tristen Gibson, taken on December 29, 2016
 - Briesen Jensen, taken on December 15, 2016
 - Aaron Becker, taken on February 13, 2017
- Amended Complaint and Jury Demand
- Answer to Complaint
- Plaintiff's Initial Disclosures
- Defendant's Initial Disclosures
- Plaintiff's Expert Disclosures
- Briesen Jensen's Answers to Interrogatories
- Briesen Jensen's Responses to Requests for Production of Documents
- Farmer's Cooperative Answers to Interrogatories
- Farmer's Cooperative Responses to Requests for Production of Documents
- Gary Gibson's Answers to Interrogatories
- Gary Gibson's Responses to Requests for Production of Documents
- Shawna Gibson's Answers to Interrogatories
- Shawna Gibson's Responses to Requests for Production of Documents
- Color photographs taken at the accident scene
- Satellite photograph of the collision site and surrounding area obtained from *Google Earth*®
- Color photographs depicting the damaged Kenworth® W900 truck tractor
- Color photographs of the damaged AGCO RoGator® farm equipment
- Background material, manufacture-supplied specifications and dimensional data regarding the 2006 Kenworth® W900L truck tractor and the attached 2013 Manac-USA® step-deck semi-trailer

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- Background material and data concerning the Highway Equipment Company® product bin utilized on the AGCO RoGator® farm implement
- Copies of photographs depicting a 2007 AGCO Corporation "RoGator®" fertilizer spreader
- Background information and manufacturer-supplied specifications for the 2007 AGCO "RoGator®" fertilizer spreader
- Personal examination, field measurements and photographic documentation of several exemplar AGCO Corporation "RoGator®" fertilizer spreaders
- Federal Motor Carrier Safety Administration's Safety Management Systems and "Snapshot" data for "*Phil Sims Trucking LLC*",
- Highway engineering data from the Nebraska Department of Roads, some of which was obtained from the State of Nebraska Attorney General's Office
- Highway engineering data from the Wayne County Department of Public Works
- Forensic documentation of the line-of-sight in the northbound approach to the County Road 857 intersection
- Examination, field measurements and photographic documentation of the highway and intersection where the crash occurred
- Forensic mapping of the area of State Highway 57 where the collision occurred, utilizing a Leica® total station electronic measuring instrument
- Meteorological and astronomical data regarding the location of the accident on the date of June 26, 2013
- Report by Stephen Sokol, PE, JD, submitted on February 1, 2017
- Transcript of deposition of Stephen Sokol, P.E. taken on March 27, 2017

Analysis of the Law Enforcement Investigation

Information contained within the State of Nebraska Investigator's Motor Vehicle Accident Report, indicated that Deputy Jesse Frank of the Wayne County Sheriff Department investigated the collision at the scene of the event. Deputy Frank prepared the official accident report under the Agency Case reference 062713. In that report, Deputy Frank indicated that the collision event occurred when the 2006 Kenworth T600 truck tractor and attached Manac drop-deck semi-trailer collided with the left side of the AGCO "RoGator®" farm implement.

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The collision between the motor vehicle and the farm implement happened at a four-way junction of State Highway 57 with a local county road. The primary roadway was straight, on a slope, and had a dry, blacktop surface composition. State Highway 57 had two lanes, with no median separating the two directions of travel. According to the investigating sheriff deputy, no environmental or roadway circumstances contributed to the occurrence of the collision. Information on the accident report also indicated that the collision event occurred during daylight hours, at a time when no adverse weather conditions were present in the atmosphere, and the ambient temperature was approximately 90 degrees.

At the time of the collision, the 2006 Kenworth® T600 truck tractor and attached Manac® drop-deck semi-trailer was traveling northbound on Nebraska State Highway 57, and was in the process of overtaking a farm implement, identified as a AGCO "RoGator®" fertilizer spreader. In the sequence of the collision events, the deputy identified "*cross median/centerline*" as the first event, "*collision with a motor vehicle in transport*" as the second event, a departure off the left side of the highway as the third event, and a "*fire/explosion*" as the fourth and "*most harmful event*".

The "RoGator®" farm equipment was also traveling northbound on State Highway 57. According to the accident report, when impact occurred, the crop sprayer was making a left turn onto County Road 857. Impact with the truck tractor and semi-trailer was described as a "*collision with a motor vehicle in transport*", which was also classified as the "*most harmful event*" related to that vehicle.

Deputy Frank indicated on the accident report that the posted speed limit on State Highway 57 was 60 m.p.h. No estimated speed was listed for either vehicle. The officer indicated on the report that "*inattention*" on the part of the driver of the 2006 Kenworth® T600 truck tractor and attached Manac® drop-deck semi-trailer contributed to the cause of the collision. The deputy listed "*no improper driving*" for the operator of the farm implement.

The 2006 Kenworth® T600 truck tractor and attached semi-trailer was owned by Phil Sims Trucking LLC. of Otis, Colorado. Gary Gibson, the driver of the Kenworth commercial motor vehicle, was one of two occupants within the vehicle at the time of the crash. Mr. Gibson was properly utilizing the shoulder and lap belt installed within the vehicle, and was not ejected from nor trapped within the vehicle. He sustained evident

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and disabling injuries to his shoulder/upper arm, as noted within the report data. A 14-year-old male, identified as Tristen Gibson, was seated within the right-front seat of the Kenworth vehicle. He was also utilizing the lap and shoulder restraint system in the truck, and was not ejected from the vehicle. Tristen Gibson sustained visible injuries to the elbow/lower arm/hand region of his body. Both occupants of the Kenworth truck were transported to a medical facility by the Winside Rescue Unit.

Other notations made on the accident report indicated that "severe" damage was sustained on the right side of the Kenworth, with all areas of the commercial motor vehicle eventually sustaining severe damage, as a result of the various harmful events experienced by that vehicle. The truck and semi-trailer were eventually towed from the crash scene by D & L Towing.

Visible and disabling, left-front, physical damage was noted by the sheriff deputy on the AGCO "RoGator®" crop fertilizer implement, which was listed on the accident report as the first traffic unit. The crop fertilizer was eventually towed from the accident scene. That farm equipment was owned by Farmers Co-op, located in Winside, Nebraska. Brieson Jensen, the operator of the fertilizer spreader, was the only occupant of that farm implement. The fertilizer spreader was equipped with a seat belt lap restraint. Mr. Jensen was not ejected from the farm implement, but did sustain visible injuries to his head. He was also transported to a local medical facility by Winside Rescue Unit.

Deputy Frank noted that, in his opinion, the consumption of alcoholic beverages, illegal drugs and/or prescription medications was not a factor for either driver involved in the crash event. Therefore, he did not require any alcohol/drug testing of either driver. He also indicated that he did not believe that the crash location needed an engineering study. The accident location did not involve a highway work zone nor damage to state property. However, the deputy did list \$800.26 in damage to the road surface, which was under the control of the Nebraska Department of Roads.

Within the narrative section of the Traffic Accident Report, Deputy Frank summarized the accident, identifying Vehicle #1 as the AGCO RoGator® farm implement, and Vehicle #2 as the Kenworth® truck tractor and attached semi-trailer:

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"Vehicle #1 was northbound on Highway 57 attempting to turn left on 857 Road. Vehicle #2 was northbound on Highway 57 behind Vehicle 1. Driver 2 attempted to avoid colliding with the slower moving vehicle 1 by passing it on the left. The front right corner of Vehicle 2 collided with the front left tire of Vehicle 1. Vehicle 2 left the roadway after the collision and entered the west ditch. Vehicle 2 struck some trees and brush piles before colliding with a tree. Vehicle 2 then caught fire and burned. Vehicle 1 was spun and came to rest in the center of the highway. Vehicle 1 was a RoGator® dry fertilizer spreader."

Field measurements apparently collected by Deputy Frank at the accident scene were incorporated into a diagram included with the State of Nebraska Investigator's Motor Vehicle Accident Report. Those measurements included the following items:

- *Vehicle 2 skid to P.O.I – 236 feet*
- *P.O.I to final rest – 185.3N*
- *Front of #2 to roadway – 77.6 W*
- *P.O.I. to highway 57 & 857 Road Sign – 54.1 W*

That diagram, which has been displayed as Figure 1 on the following page, illustrated and summarized the movements of the commercial motor vehicle and the farm equipment, based upon the physical evidence and information developed by the investigating sheriff deputy during his investigation of the incident.

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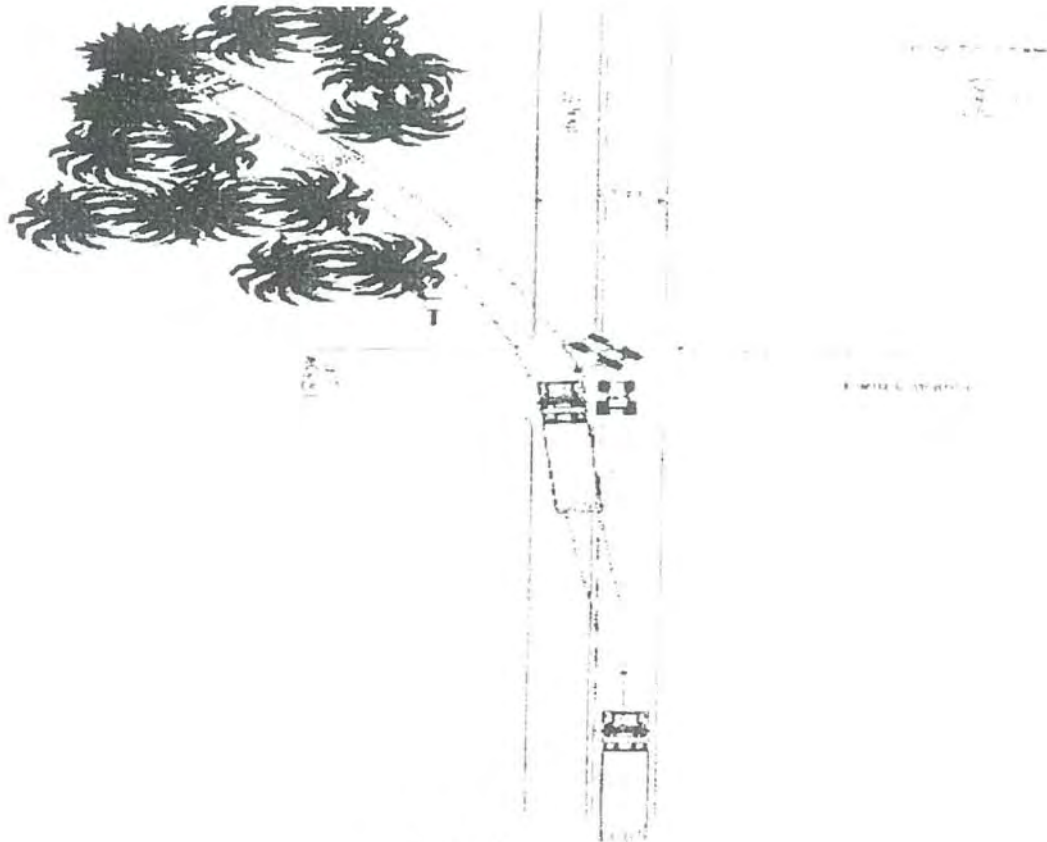


Figure 1



Figure 2 – view looking north toward collision area

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Figure 3 – looking south toward hillcrest from intersection area



Figure 4 – looking northwest from intersection toward area where the truck-trailer came to a stop within the trees

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Figure 5 – closer view of area where truck-trailer came to a stop

Analysis of Collision Location

The satellite image below, obtained from *Google Earth*[®], illustrated the appearance of the general area surrounding the crash location. The north direction would be toward the top of the photographic image, with a compass direction of east oriented toward the right edge and west oriented toward the left edge. The approximate accident location has been marked with a yellow arrow.



Figure 6

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As evident within Figure 6, the land usage surrounding the location of the traffic accident was predominantly related to agricultural operations. Development in the region was minimal-to-moderate, with land uses primarily associated with agricultural, field crops and livestock-related activities. Some residential structures were noted in the general area of the collision. Land area surrounding the crash location appeared to be lightly populated. The villages of Carroll and Winside were located to the north and south, respectively, of the accident location, with the small city of Wayne, Nebraska situated several miles southeast of the crash location.

The topography in the area was obviously non-uniform, with some minor-to-moderate variations in terrain elevations. Research of the land surface data, based on topographical mapping obtained from the U.S. Geological Survey, detailed the frequent variations of the land surfaces surrounding the accident location. That information was compared to the information developed during the on-scene investigation, and to the photographic documentation of the area surrounding the collision location, and was found to be consistent.



Figure 7 – topographical depiction of terrain features

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Nebraska State Highway 57 was classified as a "major arterial-continuous (intermediate)" highway by the Nebraska Department of Roads (NDOR), in that, it allowed vehicles to travel in a north/south direction, toward and away from several village/small town areas, and that it allowed numerous county/local roads to "feed" into it. The roadway also provided access and egress with several, east-to-west state highways.

The highway geometry, clear zone set-backs, and minimal roadside development, even with the moderate topographical variations within the accident segment of the highway, easily allowed for a line-of-sight in excess of 5,000 feet for northbound drivers in their approach to the accident area. Typical for a rural, arterial highway, the speed limit for all vehicles traveling in either direction through that highway segment was posted at 60 m.p.h. for all classifications of motor vehicles.

During the 2017 on-scene examinations of the accident location, it was noted that the roadway surface appeared to have been comprised of standard-quality, bituminous asphalt concrete material. There appeared to be a thin-coat, small aggregate, top surface within the travel lanes of the highway, with some wearing of the aggregate within the typical traveled paths of vehicle wheels. Research data indicated that the highway surface had been overlaid after the accident by NDOR. No substantial pavement surface abnormalities in the highway segment were noted within the scene photos. Any such abnormalities would have created an unsafe or hazardous road surface condition.

One northbound lane of travel and one southbound lane of travel were present within the accident area. Each travel lane was determined from field measurements to be approximately 11 to 12 feet in width. Contiguous to the outside of each of those travel lanes, a paved shoulder less than 2-feet wide existed for both travel directions. The entire width of the bituminous asphalt concrete surface was determined to be approximately 27 to 28 feet in dimension. Grass-covered shoulder areas, typically several feet in width, existed beyond the edges of the bituminous asphalt concrete material. The NDOR right-of-way was observed to vary at different locations at approximately 100-150 feet.

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Figure 8 – looking north toward intersection from northbound lane of Highway 57

In the area of the accident, a local road identified by signage as *Road 857*, connected with State Highway 57 in an approximate 90-degree angular alignment. During the on-site documentation process, it was observed that Road 857 was comprised of natural soils, and only serviced various farm fields and related property. Signage associated with that roadway indicated the road was classified as a “minimum maintenance road” or field access road, as the infrastructure, safety features and width dimension farther west did not meet the common minimum standards of an “unpaved typical gravel road”. Apparently, the county filed a request with NDOR to obtain that classification. A view of that unimproved local road has been shown below as Figure 9.



Figure 9 – looking west on the field/minimal maintenance road

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Background data, ancillary photographic evidence and supplemental information available with respect to the accident indicated that no significant pavement surface irregularities, which would have been a causal or contributing factor for the collision event, existed on State Highway 57 at the time of the crash. Based on the data reviewed and considered, the indication was that the road surface had a dry condition at the time of the accident. Thus, the pavement surface in the accident area would have had typical frictional characteristics for bituminous asphalt concrete roads, which would have been foundational to any longitudinal and lateral movements of both the commercial motor vehicle and the farm implement.

Traffic control pavement markings documented in the accident area were determined to have typical formation, with the solid, continuous, white "fog line" having a width of approximately 4 inches for both the southbound and northbound lanes of travel. Both continuous solid white lines had retroreflective characteristics during daytime observations of the highway.

A separation between the northbound and southbound travel directions was created with a traffic control device placed on the pavement surface. A combination solid-and-broken pattern, retroreflective, "traffic yellow" painted set of lines was present to identify the separation between the northbound and southbound driving lanes of the highway. In the area of the intersection, the centerline markings created a "passing" zone for northbound traffic, but a "no passing" zone for southbound traffic ascending the hill. A measurement of that highway surface marking indicated that its edge-to-edge dimension was approximately 12 to 13 inches wide. It was determined that the centerline pavement markings were in good condition and allowed for daytime detection under ambient lighting conditions, and would have allowed good nighttime detection with headlight illumination. During the on-scene documentation process, it was observed that the centerline traffic control markings changed as the highway traversed various topographical features in the general area.

In addition to pavement markings, traffic control signs were posted in the general approach to the accident area for both northbound and southbound traffic movements. Those signs included regulatory, cautionary and informational messages, and were placed at appropriate locations relative to their message. Caution signs posted in the area of the collision included the identification of "no passing zones", as well as "bridges may be icy" and "school bus stop ahead". In 2013, NDOR data indicated that the

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annualized average daily traffic count on that segment of Highway 57 was 840 vehicles, with approximately 10% of those vehicles being "*heavy commercial vehicles*".

Given the ground level height of vegetative growth adjacent to the highway at the time of the collision, those existing signs would have been very conspicuous, relative to the surrounding terrain. The traffic control signs had retroreflective sign-facing materials to assist with both daytime and nighttime conspicuity, as required by federal standards. According to the data reviewed, the regulatory speed limit within the collision area was 60 m.p.h., which was confirmed during the northbound and southbound inspection of the approach to the traffic crash location. That speed limit was consistent with a rural arterial highway.



Figure 10 – view looking north on Highway 57

The appearance of some of those pavement markings and lane configurations can be viewed within some of the photographs taken during the on-scene investigative activities conducted in March 2017; two of those photographs are shown below as Figures 11 and 12. Research data indicated that the striping pattern within that segment of Highway 57 had not changed since the time of the accident and that yearly painting of the pavement surface markings was part of the normal roadway maintenance procedure by NDOR.

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Figures 11 and 12 – views looking north on State Highway 57

All traffic control devices within the collision area and the approaches to the area appeared to be in compliance with standards contained within the Manual on Uniform Traffic Control Devices for Streets and Highways, 2009 Edition (MUTCD). That highway standard was promulgated by the Federal Highway Administration, U.S. Department of Transportation, and was adopted as a highway traffic control standard by the State of Nebraska. The MUTCD would be mandatory on all public highways, roads pursuant to legal adoption within Chapter 60, Nebraska Rules of the Road Revised (*Statutes of Nebraska, Reissue of 2010 and 2010 Supplement*) which sets forth the responsibilities for the establishment of standards for the use of traffic control devices in the State of Nebraska.

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Analysis of Accident Vehicles

It should be noted that neither of the two vehicles involved in the collision was personally inspected during the investigative and reconstruction process. The 2006 Kenworth® truck tractor was significantly damaged during the collision events, with additional physical damage created by the post-crash fire. Authorities with Phillip Sims Trucking eventually disposed of the vehicle. The AGCO RoGator® farm implement was repaired after the crash and subsequently put back into service, but was completely destroyed in a June 2014 tornado at the facilities of Farmers Co-operative in Pilger, Nebraska. Manufacturer specifications, dimensional data and the inspection of several exemplar vehicles were used to create data for the vehicles during the reconstruction and the forensic analysis process.

Kenworth truck and semi-trailer

A forensic analysis of the Vehicle Identification Number (VIN) included within the State of Nebraska Investigator's Motor Vehicle Accident Report was completed. That VIN, listed as 1XKWDB9X06J112668, indicated the vehicle was a 2006 Kenworth® truck tractor, but a model W900L, not a T600 model as shown on the police report.

The identified 2006 Kenworth® W900L truck tractor was a Class 8 commercial motor vehicle. It had a conventional cab with an attached mid-rise sleeper berth and equipment, Merritt®, three-door cab-protection "headache rack", storage compartment mounted to the rear of the back wall of the sleeper berth. A front grille guard structure was also attached to the front of the Kenworth vehicle. The truck was equipped with a Caterpillar® C15 diesel engine with a 14.6 liter displacement, and utilized a "6 x 4" drivetrain. The truck had a VIN-identified gross vehicle weight rating of between 47,000 and 57,000 pounds.

Manufacturer-supplied dimensional specifications indicated that the Kenworth® W900 had an overall length of approximately 25 to 28 feet, a width of about 8.5 feet, and a wheelbase length of approximately 22 to 24 feet. Some of the photographs that displayed the damaged Kenworth® W900 have been included on the following page.

As evident within the photographs, a significant number of components were damaged during the collision events, as well as during the subsequent fire that consumed the forward portion of the Kenworth® W900. A majority of that collision-related structural damage was within the forward portions of the heavy-duty truck tractor.

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Figures 13 through 15 – views of the damaged Kenworth® W900

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To assist in the visualization of the Kenworth® truck tractor, several photos of exemplar 2006 Kenworth® W900L vehicles have been displayed below.



Figures 16 through 18 – exemplar 2006 Kenworth W900 truck tractors

The 2013 Manac® step-deck semi-trailer involved in the crash had a twin axle, with a spread formation, semi-trailer. The heavy-duty, low-profile semi-trailer was hauling an assortment of antique military vehicles. There was no indication that the semi-trailer or its load sustained any substantial physical damage during the crash event.



Figures 19 and 20 –
views of the Manac®
step-deck semi-trailer



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Research into Phillip Sims Trucking L.L.C. through the Safety Management System of the Federal Motor Carrier Safety Administration indicated that the carrier was registered with USDOT #362045, and was an authorized interstate carrier of property, with machinery/large objects and livestock being the principle commodities transported. The registered business address for the carrier was a farm located at 35147 Washington County Road 42, in Otis, Colorado. The business reported that it had 10 drivers for 10 power units and 15 trailers. As of the last rating date of March 10, 2016, the motor carrier had a "Satisfactory" safety rating. The most current BASIC status for Phil Simms Trucking indicated "on-road performance" values within parameters, and with no acute or critical violations discovered.

Farm Implement

The AGCO Corporation "RoGator®" Model SS1074 was a large-capacity, dry fertilizer spreader implement used within the agricultural industry. That farm implement, which has also been referred to as a "flotation" vehicle, was utilized to spread dry chemical fertilizers, agricultural limestone and other granular products onto various types of land and growing field crops. The equipment would be a specialty-use implement, in that it was not compatible with transitioning into other agricultural usages.

The AGCO RoGator® was also identified by the manufacturer name of AG-Chem®. The RoGator® specialty equipment was powered by a Caterpillar® diesel engine, with integrated hydraulic/hydrostatic and direct-drive motor devices at each wheel.

Based on manufacturer-supplied data, the 2007 AGCO "RoGator®" fertilizer spreader sprayer had an overall length of approximately 25 feet, a wheelbase of about 15 feet, an overall width of approximately 12.8 feet and an overall height of approximately 12.5 to 13.5 feet. The cab and chassis weight was listed at 27,600 pounds.

The Model SS1074 farm implement included a large, beveled storage bin, manufactured by Highway Equipment Company® of Cedar Rapids, Iowa, for dry and granular products to be stored/carried prior to application. That bin had a 200-cubic-foot capacity storage box (Model 3020G4), and was positioned immediately behind the operator's enclosed cab (ROPS) structure. The maximum ground speed of the vehicle was identified as approximately 30 m.p.h.

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Figures 21 and 22 – views of an exemplar 2007 AGCO “RoGator®” with a liquid sprayer



Figures 23 and 24 – views of an exemplar 2014 AGCO “RoGator®” with a dry spreader

Safety equipment installed on the AGCO RoGator® farm implement was in place for any activities involving operating the equipment on public roads. Those safety items included front road lights, tail and brake lights, hazard warning lights, turn indicators and rear view mirrors. The manufacturer also recommended obeying all traffic safety rules and to operate the vehicle with hazard warning lights activated. According to manufacturer information contained within the owner's manual, the use of the installed, amber-colored, flashing “warning lights”, as well as turn signals, on the AGCO RoGator® implement was recommended when the implement was being driven on public roads.

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During the on-site inspections, the appearance of the Highway Equipment Company® spreader/applicator from the rear was documented with photographs. That perspective has been displayed as Figure 25 below. The photograph was taken at a distance of several hundred feet behind the unit. The dry bulk bin on the rear of the farm implement measured 10 feet in width, with a bin height of approximately 5 feet.



Figure 25 – view of the rear of the AGCO RoGator® spreader/applicator bin



Figure 26 – view of the RoGator® at the accident scene

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Analysis and Reconstruction of Collision Event

The assessment and evaluation of this traffic accident utilized scientific principles and analytical procedures commonly relied upon within the field of traffic accident reconstruction and collision analysis. All background materials, supplied documentation, foundational information and physical evidence reviewed and developed with respect to this traffic accident were evaluated and analyzed through the applications and principles commonly relied upon within the field of motor vehicle collision investigation and reconstruction. The techniques and applications incorporated into the forensic analysis, assessment of the physical evidence and the reconstruction of the traffic accident, which were the basis for the findings and conclusions contained within this preliminary report, have been commonly utilized and accepted in the field of traffic collision analysis.

As previously mentioned, the operator of the farm implement, Brieson Jensen, provided information regarding his recollections of the traffic event. During sworn testimony that occurred on December 16, 2016 as a part of the litigation process, Mr. Jensen provided information which included:

- He was employed by Farmers Co-operative during the growing season of 2013.
- After studying materials and receiving training through the Co-op related to the application of chemicals in agricultural fields, he began to operate the dry spreader for customers of Farmers Co-op.
- Mr. Jensen operated the same RoGator® implement every day, and would start his day at the Farmers' Co-operative facility in Pilger.
- He received his assignments for the applicator farm implement at the beginning of the day, with those assignments including the position of the field, the application rate and a plat map of where the field was located.
- Prior to the crash event, Mr. Jensen was traveling north on Highway 57 from Highway 98, and was intending on stopping at, or near, the intersection with Road 857. At that location, he was going to wait for a loader truck to fill his product bin.
- As he traveled toward that intersection, he recalled that he was likely traveling at the speed of 24 m.p.h. with the RoGator® in fourth gear.
- He recalled that there was a hill to the south of the intersection where the accident eventually occurred, and that he traveled down that hill for about 200 yards before reaching the intersection area.

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- Mr. Jensen recalled checking his mirrors, but did not see any vehicles behind his farm implement. He began to slow the implement from 24 m.p.h. to a speed that he recalled was likely slower than 8 m.p.h., and more likely about 4 to 5 m.p.h.
- He signaled his intent to turn left at the intersection, checked his rear-view mirrors again, checked the area in front of his implement and then started the process of turning at the intersection.
- As he scanned the area west of the intersection while he was approaching it, Mr. Jensen said he was determining the best way to position the farm implement in order to load the fertilizer product into the bin.
- While he was scanning the intersection area, he recalled that he likely slowed the RoGator® down even more, perhaps even possibly stopping the implement for no more than 15 seconds.
- Once he made his decision to turn toward the left, he checked his mirrors, checked the area in front of his implement checked his mirrors and then started to turn.
- As he started the turn, he recalled that a portion of his implement was likely to the right of the pavement edge. As Mr. Jensen started to move forward and got to a point that he thought was about 30% to 40% through the left turn, he then heard an air horn.
- When he heard the air horn, he looked over his left shoulder, saw a "maroon blur" and pulled back on the operating throttle of the farm implement as hard as he could.
- As a result of the collision by the truck and trailer vehicle, Mr. Jensen recalled that he was thrown around in the cab, hitting his head on one of the support posts of the cab. His farm implement had been deflected toward the north and he ended up stopping in the highway, facing north.
- After the crash, Mr. Jensen exited his farm implement, went down to the truck-trailer vehicle and assisted the two men in exiting the cab of the Kenworth®.

The operator of the Kenworth® W900 truck tractor and attached Manac® drop-deck semi-trailer, Gary Gibson, Jr., also provided information regarding his recollections of the traffic event. During sworn testimony, which occurred on December 29, 2016, Mr. Gibson provided information which included:

- Mr. Gibson received his Commercial Driver's License in approximately 1998, having taken classes at the U.S. Truck Driving School in Wheat Ridge, Colorado.

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- Although he grew up in Southern Colorado, Mr. Gibson spent a few years living in Laurel, Nebraska. While in Nebraska, he worked for Deerfield Equipment in Laurel, delivering farm equipment, sprayers and agricultural machinery to customers of the business.
- During the course of his work in Nebraska, Mr. Gibson hauled grain to storage bins owned by Deerfield Farms, which were located on State Highway 57, just north of the intersection where the accident occurred. He indicated that he was familiar with the highway, having traveled on it many times.
- Mr. Gibson had also traveled on Road 857 on prior occasions, utilizing that minimum-maintenance road to deliver farm equipment to customers of Deerfield Equipment, and to perform farming activities associated with land owned by the Deerfield family.
- He also owned a business in which he provided mobile repair and maintenance services to heavy-duty vehicles, machinery and equipment while living in Laurel, Nebraska. Mr. Gibson sold that service truck and its equipment in September 2013, after the crash event.
- After moving back to Colorado from Nebraska, Mr. Gibson hired on as a truck driver with Phil Sims Trucking LLC. He was involved in moving heavy equipment with their flatbed division of the company.
- On the trip that eventually resulted in the collision with the farm implement, he had loaded some antique military equipment in Lexington, Nebraska and was headed to a destination in Minnesota.
- After traveling through Norfolk, Nebraska, Mr. Gibson made his way to Highway 98 and then turned north from that intersection onto State Highway 57. That is the last thing he remembers prior to the accident and about the accident.
- Mr. Gibson has no memory of any of the facts, circumstances, events surrounding or related to the traffic collision with the RoGator® farm implement.

There were no independent witnesses to the accident. A passenger in the Kenworth truck tractor, identified as Tristen Gibson, witnessed the accident. Tristen, who was the 14-year-old son of the truck driver Gary Gibson, Jr., recalled traveling north on Highway 57. He saw the farm implement in the highway as they came over a hill in the road. Tristen recalled the field sprayer implement was facing toward the west, with its left-front wheel on the centerline of the highway. He recalled that his dad applied the brakes of the truck in order to avoid the farm implement, but the two vehicles collided. Tristen remembered that the front passenger side of the Kenworth® collided with the front-left side of the RoGator®. After the collision with the RoGator®, the truck and trailer that he

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was riding in departed the highway, entered the ditch and collided with a group of trees. He did not know the speed of the truck prior to the time of the collision, at the time of the collision with the farm implement, nor as the truck traveled northbound on Highway 57 before his father applied the brakes of the truck when he saw the RoGator® farm implement at the intersection.

During an examination of the northbound approach to the crash location, it was determined that a line-of-sight from a large hillcrest, just north of the Nebraska State Highway 98 and 57 intersection, to the next large hillcrest at the horizon line was possible, with that distance being over one mile. Additionally, the view toward the north, to the Road 857 intersection area, was also possible. That distance to the intersection was determined to be approximately 2,975 feet, as represented within the photograph identified as Figure 27 below. The timing of northbound truck traffic traveling between that hillcrest location and the next smaller hillcrest area, just south of the intersection with Road 857, was determined to be between approximately 25 to 30 seconds.



Figure 27 – view toward the north on State Highway 57

The line-of-sight potential, from both driver/operator perspectives, would have been enhanced in this particular situation by the excessive size of the farm implement. As previously noted, the overall width of the AGCO RoGator® farm implement was in excess of 12 feet, which was wider than the northbound travel lane on State Highway 57. The AGCO RoGator® farm implement was approximately 12.5 feet in height, which would place the farm implement's vertical profile very similar to that of a box van semi-trailer. Therefore, relative to a viewing perspective above the highway surface, the RoGator®'s vertical overall height would be analogous to that of a typical box van semi-

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trailer's overall height. Forensic work conducted at the scene of this traffic collision, as well as within the northbound approach to the collision location, indicated that the minimal terrain elevation to the south of the intersection would not have been significant in preventing, inhibiting or delaying detection of the presence of the AGCO RoGator® farm implement as it progressed from the smaller hillcrest down towards the north and towards the intersection of Road 857. An example of that forensic work has been displayed within Figure 28 below.



Figure 28
 (replicated in
 Appendix B)

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Figures 29 and 30 – photographs taken by the Sheriff Department during their investigation

Figure 29, in particular, provided some significant perspective of the grade of the hill located south of the collision intersection. Additionally, the height differential between the AGCO RoGator® farm equipment and the adjacent Ford® Crown Victoria police vehicle can be viewed.

Observations made during the on-site examinations of the location where the traffic crash occurred indicated that the magnitude of the terrain differentials associated with the hillcrest area to the immediate south of the collision location, were not so substantial that it completely prevented or substantially inhibited the visual detectability of the RoGator® farm implement as the large farm implement descended the northbound grade in its approach to Road 857.

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Figure 31 – compilation of photos showing southbound truck

Figure 31 illustrated the minor nature of the terrain differential just south of the intersection with Road 857. While standing on the west side of Road 857, with a camera position at just less than 6 feet above the ground, the right, outside rear-view mirror on the Class 8 straight truck can be seen for a substantial distance as the truck progresses toward the south. Figure 32, which also displayed a few images from a photographic sequence, illustrated the same minor terrain differential, relative to an approximate 6 foot camera height within the southbound lane of Highway 57.



Figure 32 – Class 8 truck backing into a driveway more than 600 feet from the intersection

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In order to demonstrate and validate observations and photographic evidence related to the visual detectability of the RoGator® farm implement by the northbound Kenworth truck driver, research was conducted at the scene of the crash. A graduated surveyor's stadia rod, with two, distinctive-colored, standard sized (8.5" by 11") sheets of paper attached, was placed at the approximate south end of the intersection with Road 857. That stadia rod was extended to a point where the top edge of the upper sheet of colored paper was at a fixed distance of 12.5 feet above the roadway/ground surface. That 12.5 feet of height was the approximate equivalent of the minimum vertical height of the AGCO RoGator® SS1074 farm implement with the attached Highway Equipment Company® hopper bin, based upon manufacturer-supplied specifications and forensic measuring of exemplar equipment.



Figure 33 – exemplar

Documentation of the exposure of the rear profile of the farm implement could then be obtained at various identifiable locations prior to, or south of, the intersection of 857 Road with State Highway 57. That photographic documentation occurred at a height of approximately 7 feet, 2 inches above the pavement surface, which would replicate the lower end of the vertical range of driver's eye height for the Kenworth® W900 truck tractor. It was probable that Mr. Gibson, Jr. had a higher vertical profile when seated within the cab of his Kenworth® W900 truck tractor. Thus, his ability to detect, discern and identify the AGCO RoGator® farm implement, which was positioned to the north of him as he progressed in a northbound direction, should have been easier and more efficient. Some of the photographic documentation created during that research activity has been incorporated into this preliminary report.

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The following sequence of photographs illustrated the line-of-sight potentials of the rear structure of the AGCO RoGator[®] farm implement by the driver of the northbound Kenworth[®] W900L truck tractor.



Figure 34a – approximately 2,975 feet from intersection; arrow shows vertical marker

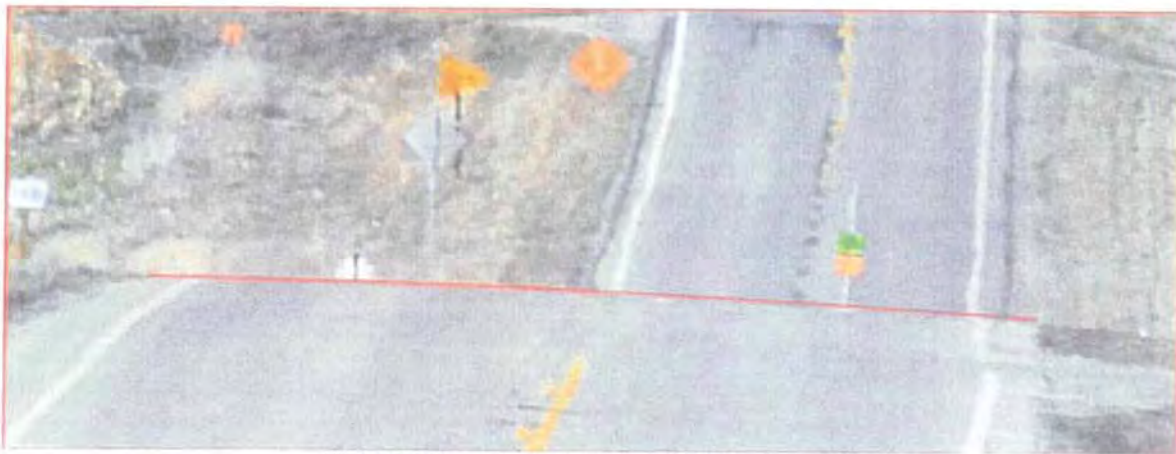


Figure 34b – close-up view of same marker at 2,975 feet
with horizon line marked in yellow

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Figure 35a – approximately 1,850 feet from intersection



**Figure 35b – close-up view of vertical marker
with horizon line marked in red**

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Figure 36a – approximately 795 feet from intersection



Figure 36b – close-up view of vertical marker

As evident with Figures 35a and 35b, at a distance of between approximately 1,800 feet and 795 feet from the eventual area of impact, a substantial quantity of the rear vertical structure (as much as 4.5 feet of the overall height of 12.5 feet) of the AGCO RoGator® farm implement would have been easily detectable and recognizable as farm equipment positioned on the highway. At all points closer than approximately 795 feet, a majority of the entire rear vertical profile of the farm implement would have been detectable and identifiable. Examples of that substantial vertical distance have been displayed in the photographic evidence incorporated below.

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Figure 37 – view of vertical pole from approximately 700 feet from intersection



Figure 38- view toward intersection from approximately 600 feet away

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The forensic analysis of the collision also involved an assessment of the interaction between the AGCO farm implement and the Kenworth truck tractor. Photogrammetrically evaluated positioning of the two vehicles at the time of the collision, based upon numerous photographic images taken by the Wayne County Sheriff Department, placed the area of impact for this collision approximately 3.7 feet east of the west fog/lane limit line on Highway 57. That impact area would place the right-front corner of the Kenworth® W900 truck tractor striking the left front wheel of the RoGator® farm implement.

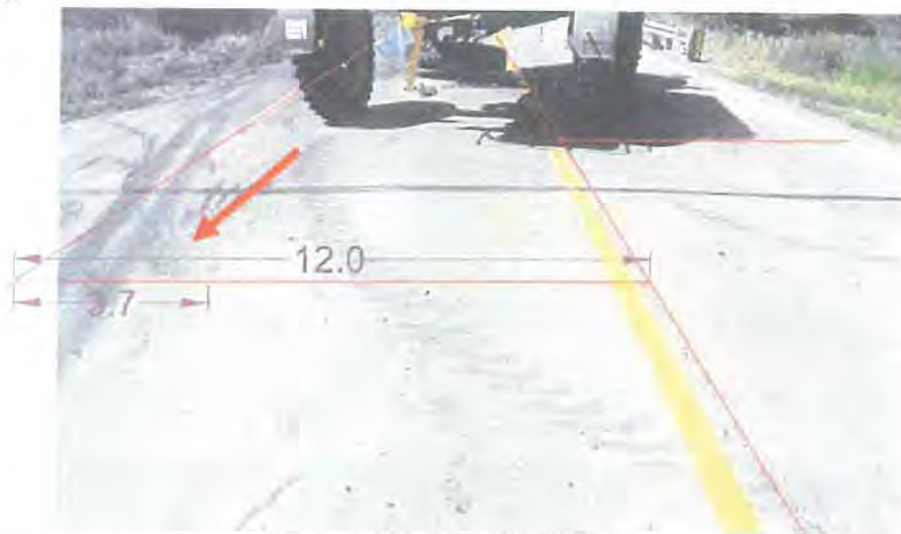


Figure 39 – area of collision

The beginning of the collision scrub mark, as well as the curvilinear tire pattern emanating from the initiating tire mark, can be viewed within Figure 39. Due to the eccentric nature of the collision interaction, the RoGator® implement underwent a counter-clockwise rotational movement toward the northeast. Other tire marks, with the distinctive dual-diagonal tractor-style print, can be easily detected. The right-rear and left-rear tire mark transfers from the RoGator®'s rear axle can be easily viewed, with their distinctive curvilinear pattern.

The diagonal movement of the dual-wheeled skid marks, evident within the left edge area of Figure 39, can also be viewed. Those tire marks were created by the right-side, dual wheels of the Kenworth® truck tractor and the Manac® step-deck semi-trailer.

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Based upon the forensic evaluation of the law enforcement photographs, a scaled forensic diagram was created. The foundation for that diagram was forensic mapping conducted at the scene of the crash, utilizing the Leica total station measuring instrument. Measurements obtained by the investigating sheriff deputy and evidence from the photographic evidence was then incorporated into the diagram. Geometric data, obtained from satellite imagery downloaded from Google® Maps, was later integrated into the diagram to incorporate some of the perspective features that were present in the area.

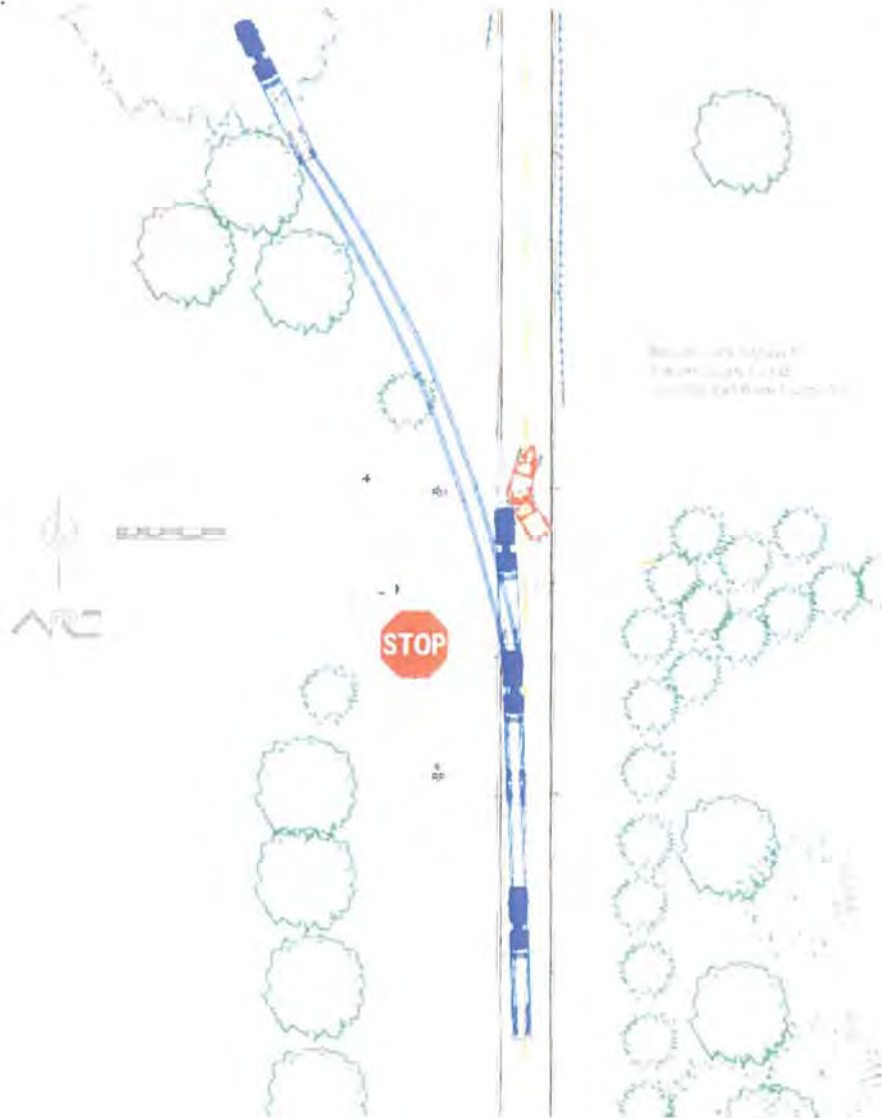


Figure 40- scaled
 forensic diagram

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This aspect of the reconstruction and forensic analysis of the traffic collision allowed an assessment of the distances created by the discernible tire marks of the northbound truck, as well as distances related to the movement of the AGCO RoGator® farm implement as it initiated a left-turn maneuver. A time-distance-velocity evaluation was then integrated into the dynamic analysis of the collision. That analysis indicted that Mr. Gibson probably did not alter his driving as he traveled northbound on Highway 57 until he was within the downhill segment of the highway, immediately north of the intersection with Road 857. There was no physical evidence indicating that he initiated any significant slowing of the ground speed of his northbound Kenworth® W900L truck tractor and attached semi-trailer until he was in close proximity to the eventual collision. The tire "skid marks" created by the braking action of his truck tractor did not start until the front of his vehicle was within a distance of 150 feet from the eventual collision location.

Data related to factors present during this particular traffic accident were integrated into an analysis of the crash events, using the *Interactive Driver Response Research*® analysis tool. The IDRR® analysis process incorporated mathematical algorithms (multiple linear stepwise regression formulas) to determine how other drivers, faced with a similar or analogous situation, have responded. That research was based upon results from over 160 research studies published worldwide that incorporated over 10,000 scientific experiment results related to human responses when driving. In addition, video frame analysis of several hundred "real world" emergency responses (crash events) were integrated into that research and traffic accident analysis process, which has been peer-reviewed in numerous academic and scientific-related venues.

As a result of the substantial number of published, scientific research treatises integrated into that analysis tool, the IDRR® program provided an estimate of driver response times to commonly encountered traffic events with relative accuracy and scientific validity. The process was utilized to evaluate the driving response that would be analogous to that of the driver of the Kenworth® W900 truck tractor, Mr. Gibson. Based upon our forensic analysis, it was determined that an "average" perception-response time interval to the lead vehicle situation would have been approximately 1.1 to 1.2 seconds. The range of the 85th percentile time interval response to a "lead vehicle" was approximately 1.5 seconds.

Given that the AGCO RoGator® farm implement could have been detected at a distance in excess of 800 feet, it can be determined that there would have been in excess of 600

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feet available to Mr. Gibson in which he could have initiated a safe and controlled slowing of his vehicle to the presence of the farm implement within his lane of travel. Calculations related to the movement of Mr. Gibson's commercial motor vehicle indicated that it would likely have taken that vehicle a minimum distance within the range of 275 to 500 feet to come to a safe and controlled stop on the highway. Even if he had not chosen to completely stop his vehicle within the northbound lane of travel, Mr. Gibson could have slowed his vehicle to a point where it would have been safer to initiate an overtaking maneuver after clearing the intersection. Statutes in Nebraska and in Colorado prohibit the overtaking/passing of another vehicle on a two-lane highway within an intersection.

The study and foundation of basic skills related to and involved with the driving task has often been referred to as "human factors" within the field of traffic accident reconstruction. It has also been referenced as the "human element" when applied to the operation of a motor vehicle or specialized equipment within a highway environment. The driving maneuvers and minimum-level skill capabilities demonstrated by the operator of the Kenworth® W900L truck tractor and attached Manac® step-deck, twin-axle semi-trailer were compared to published guidelines for drivers of all types of vehicles. Those quantifiable and identifiable driving skills for basic drivers, developed from guidelines resulting from published scientific research by the American Association of Motor Vehicle Administrators, establish a level of minimum competency for vehicle drivers, as well as equipment operators within a highway environment, in all three of the following categories:

- Perceptual: The ability to interpret the traffic environment in a way that permits proper and safe vehicle operation (Seeing and knowing what to do).
- Perceptual – Motor: The ability to couple driving responses with traffic stimuli (Seeing and knowing what to do, and then doing it)
- Attention Sharing: The ability to carry out two or more performances simultaneously (Steer, control speed, and watch).

The "Commercial Driver's License" manual for both Colorado and Nebraska, for example, incorporated those general guidelines when identifying accepted or recommended general practices for drivers and equipment operators on a public highway. Those practices would include adjusting the vehicle's movement, directionality or speed to different traffic situations, such as identifying trouble areas while driving, following at safe distances, entering highways from a stop, speed and space

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management within differing highway situations or conditions, changing direction and other commonly-encountered rural driving situations.

The human factors analysis supported a conclusion that potential and/or substantial hazards within the highway travel lanes, such as the northbound farm implement, should be detectable as a potential hazard or immediate hazard within environmental situations analogous to the accident situation in this case. As vehicle operators traverse locations where those potential hazards exist, such as rural highways in high activity agricultural regions during the summer growing season, a driver's ability to detect, discern and recognize potential hazard(s) while approaching those locations at various speeds would be enhanced by the rural nature of the surroundings, his knowledge of the area based upon previous travel on that roadway and on the intersecting local road (Road 857), the physical size of the farm implement (leading vehicle), the color/visual contrast of the leading vehicle, the overall appearance of the leading vehicle and the substantial natural ambient lighting. Additional factors would include the available warning lights/turn signals/brake lights displayed on the farm implement, the magnitude of the conspicuity, the anticipation of the hazardous object or situation, the strength of the visual stimulus, the eccentricity of the hazard, the size of the hazardous object or situation, the pattern of the hazardous object or situation, and the immediacy of the hazardous object or situation.

In this case, it was concluded that Mr. Gibson, probably did not discern or detect the presence of the AGCO RoGator® farm implement in a timely manner. Due to his delayed detection/identification and subsequent response, he was not able to reduce his vehicle's speed in a safe and controlled manner, and adjust his driving response/approach, while in control of his vehicle, within the area where the slow-moving AGCO RoGator® farm implement was traveling. The available physical evidence indicated that Mr. Gibson's response occurred in an uncontrolled and hazardous manner, as evidenced by the impact between the commercial motor vehicle and the left-turning farm equipment and by the extensive skidding of his vehicle prior to, and subsequent to, the impact with the farm implement. The physical evidence also indicated that the aggressive braking and swerving response of the commercial motor vehicle occurred at a point when the vehicle was within approximately 250 feet of the eventual collision location. The lack of any detection, recognition or operational adjustment to the slow-moving farm implement was strongly indicative of Mr. Gibson's failure to implement basic, minimum competency driving skills that could have easily avoided a collision with a slower-moving farm implement.

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A review of Mr. Sokol's written report of February 1, 2017 indicated that it was thorough in his explanation of the vehicle dynamics related to the collision between the commercial motor vehicle and the farm implement. However, Mr. Sokol surmised that the driving actions of Mr. Gibson were apparently acceptable and safe, as a *"prudent driver traveling northbound would begin the process of moving into the southbound traffic so that one could safely pass the RoGator"*. Mr. Sokol further opined that, *"Mr. Gibson was forced to travel to the left of the RoGator in order to continue traveling northbound and avoid an impact with the RoGator within the northbound traffic lane"*. Such conclusions lack an application of safe driving techniques, as established by state traffic statutes and safe driving recommendations/guidelines as contained with state driving manuals. For example, safe driving recommendations for commercial motor vehicle operators indicate that truck drivers should scan ahead for identifying and evaluating traffic conditions/situations for a distance their vehicle will cover in 12 to 15 seconds. At a speed of approximately 60 m.p.h., that distance would be within the approximate range of 1,050 feet to 1,300 feet.

Mr. Sokol failed to indicate that Mr. Jensen was legally entitled to operate the AGCO RoGator® farm implement on the highway, that Mr. Jensen was entitled to make a left turn from a state highway onto Road 857, that Mr. Jensen was still within the intersection area as indicated by the pavement geometry at the intersection and that Mr. Jensen had been signaling for a left-turn maneuver prior to initiating his turn. Mr. Jensen also was entitled to make a left turn at a speed that was safe and in control for his farm implement.

Mr. Sokol also failed to acknowledge that Mr. Gibson was familiar with that state highway, that he had traveled on that segment of Highway 57 many times, that he was familiar with the presence of the intersection with Road 857, that he was familiar with the appearance of farm equipment, and that he was familiar with the usage of farm equipment in this particular area of Wayne County. Mr. Sokol failed to acknowledge that Mr. Gibson had the opportunity and ability to discern and detect the presence of the farm implement in the area to the south of the hillcrest located south of the intersection. That additional viewing distance would have allowed Mr. Gibson additional time to adjust his driving approach in a safe and controlled manner, accommodating the lawful usage to the highway to another vehicle operator. All those factors were consistent with a conclusion that Mr. Gibson was inattentive to the driving task and inattentive to the existing traffic situation presented to him as he traveled toward the north. The proper

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conduct of a driver would be to reduce the level of risk when driving, by making reasonable and safe adjustments in the vehicle's operation.

Summary

We were asked to review provided materials and develop information, data and physical evidence, and then complete an initial collision reconstruction and forensic analysis of a motor vehicle traffic accident that occurred on June 26, 2013, at the intersection of Nebraska State Highway 57 with County Road 857, in a rural portion of Wayne County, Nebraska. The traffic event involved a 2006 Kenworth W900L truck tractor and attached Manac drop-deck semi-trailer, operated by Gary Gibson, Jr., and a 2007 AGCO "RoGator®" self-propelled fertilizer spreader, operated by Briesen Jensen.

Based upon the information and data reviewed, developed, considered and analyzed, several findings and conclusions related to the traffic accident have been identified within this report. A summary of those findings indicate that Mr. Gibson had an obligation to operate his commercial motor vehicle in a safe manner while traveling on a public highway. He failed to discern and detect, in a timely manner, a large farm implement traveling on the same highway, but at a much slower speed, and failed to maintain control of his vehicle while the farm implement was making a left turn at an intersection and while Mr. Gibson was proceeding through that same intersection.

Should additional information, physical evidence or other materials become available with respect to this collision, the findings and opinions expressed in this initial summary report may be altered, depending on the nature of the information and on an evaluation of that data.



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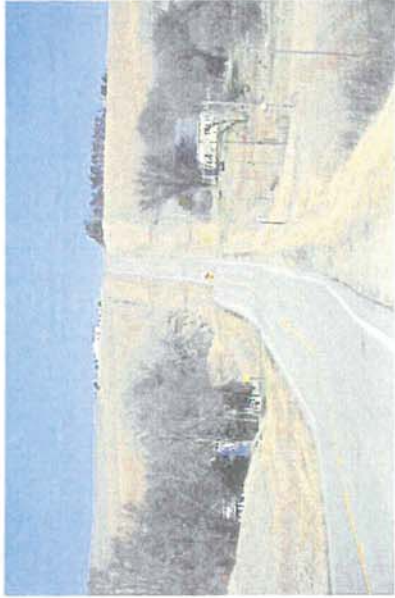
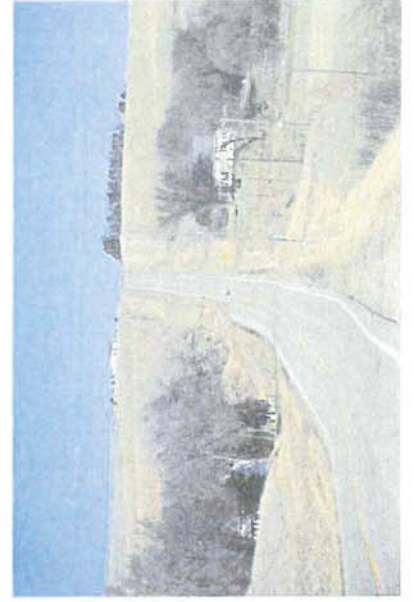
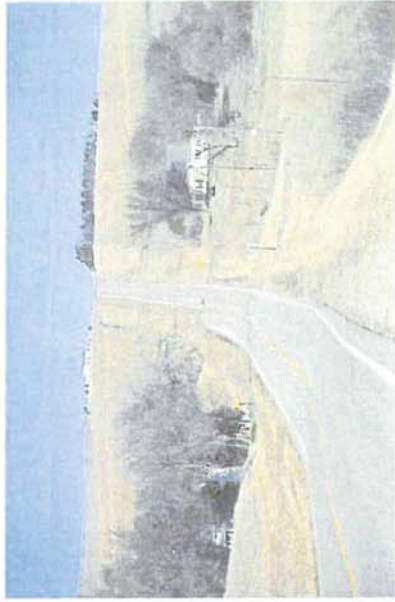
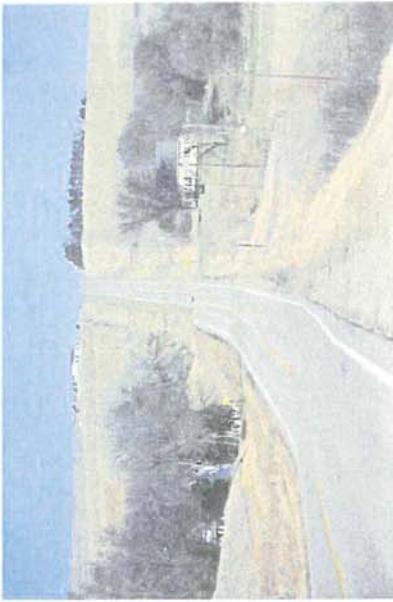
Appendix A – General References

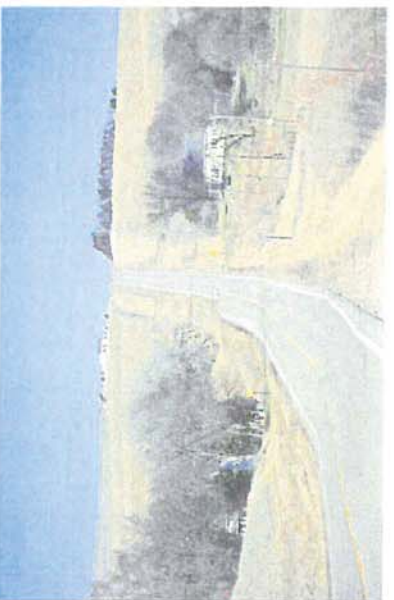
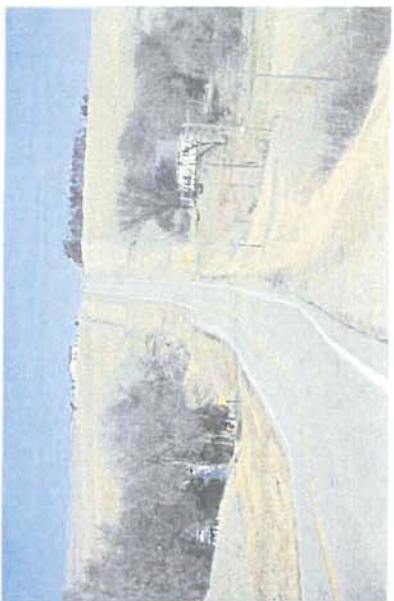
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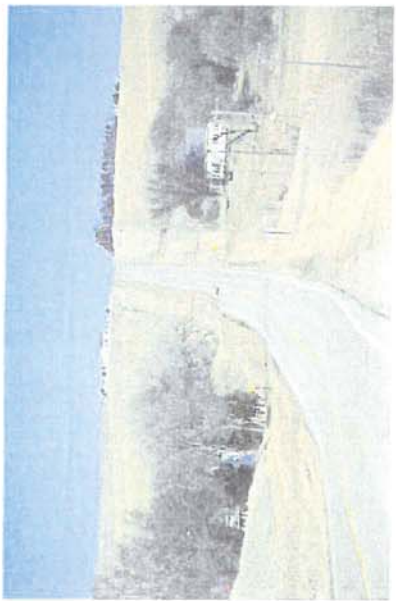
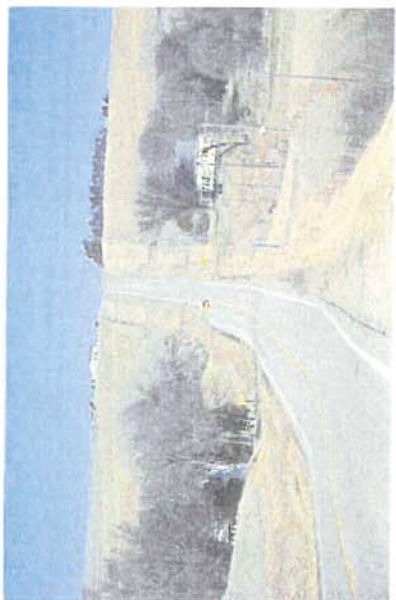
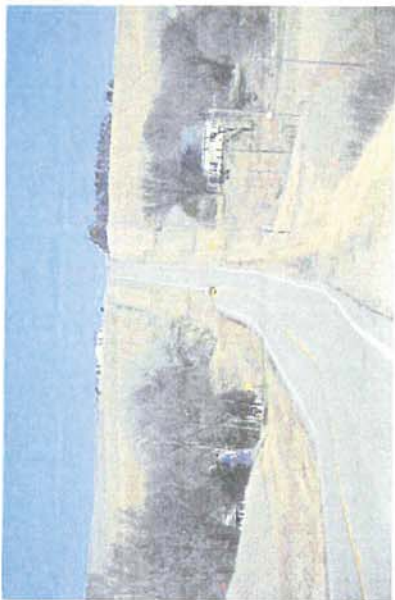
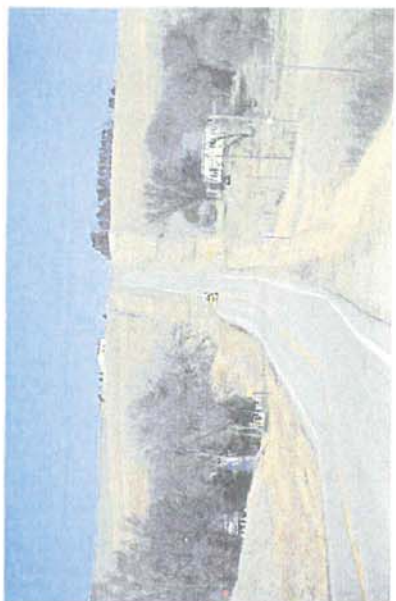
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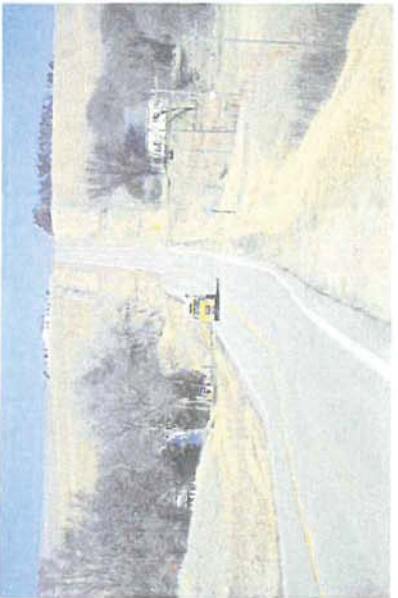
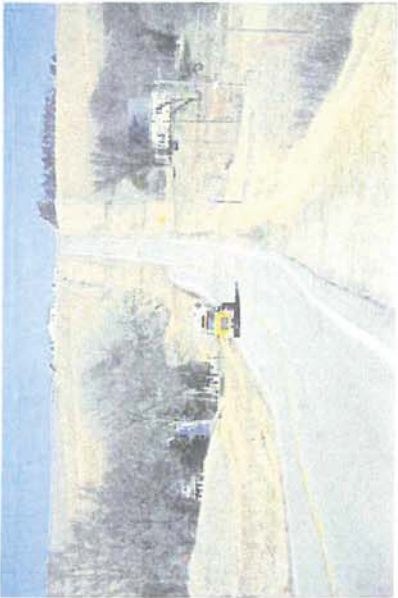
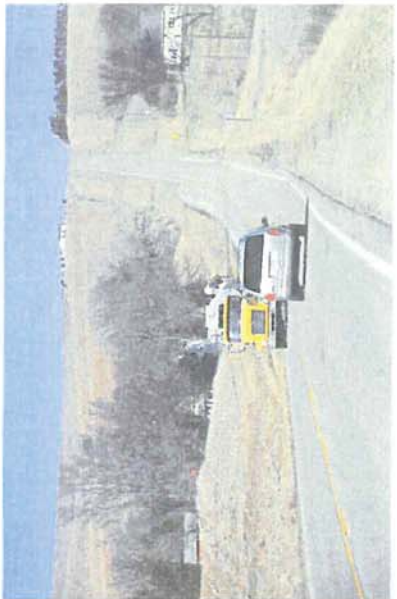
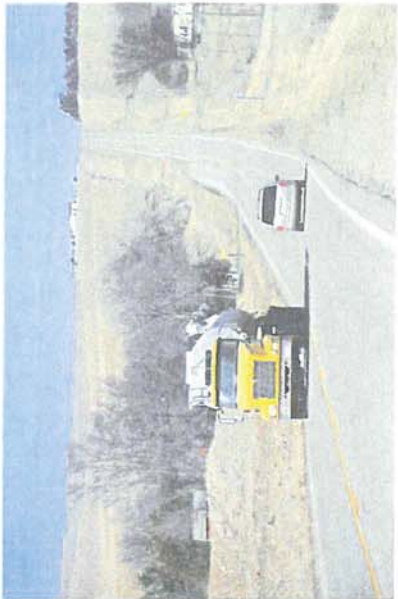
Appendix B – Scene Photographs

The following four pages (Pages 44 thru 47) duplicate Figure 28 within the report and provide an enlarged view of the line-of-sight that was discussed.











FAILURE ANALYSIS ACCIDENT RECONSTRUCTION

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Registered Professional Civil Engineer

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February 1, 2017

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RE: Gibson vs. Jensen & Farmers Co-Operative

This correspondence will discuss areas of analysis conducted to date in regards to the circumstances of this motor vehicle accident.

General Information:

The above referenced motor vehicle accident occurred at the intersection of Highway 57 and 857 Road in Wayne County, Nebraska on June 26, 2013 at approximately 3:37 p.m.. The speed limit on Highway 57 is 60 MPH. At the time of the accident, it was daylight with clear conditions and the roadway surface conditions were dry.

The accident involved a 2006 Kenworth semi-tractor towing a 2013 Manac trailer and a 2007 Ag-Chem RoGator model 1074SSc. The tractor/trailer was being operated by Gary Gibson and the RoGator was being driven by Brieson Jensen. At the time of the collision, Mr. Jensen was attempting to turn left near 857 Road to proceed westbound and the Gibson tractor/trailer was traveling northbound on Highway 57. The Gibson vehicle impacted the front left tire of the RoGator, then continued down an embankment before impacting a large tree and coming to rest. The tractor then caught fire prior to Mr. Gibson exiting the vehicle. As a result of the collision, the Gibson tractor and the RoGator were damaged and Mr. Gibson sustained injuries.

Available Information:

At the time of the reconstruction report, the following information had been provided or obtained.

1. State of Nebraska Investigator's Motor Vehicle Accident Report.
2. Deposition of Brieson Jensen taken on December 15, 2016.
3. Deposition of Tristen Gibson taken on December 29, 2016.
4. Tire specification research for the tires located on the 2007 RoGator.
5. RoGator Sprayers and Super Sprayers Series brochures and specification data.

Wheat
EXHIBIT 3
6-21-17 ercb
AGREN BLANDO REPORTING



6. Correspondence dated October 24, 2014, from the McDivitt Law Firm and enclosed documents.
7. On March 31, 2015, an accident site inspection and survey were conducted by FAAR Consulting. Photographs of the accident site were also taken on that date.
8. Telephone conferences with Butler Ag Equipment in Fremont, NE on April 9, 2015.
9. On January 19, 2017, an exemplar RoGator was photographed and inspected at Butler Ag Equipment in Fremont, NE.
10. Defendant Farmers Co-Operative's Answers to Plaintiff's First Set of Interrogatories.
11. Defendant Brieson Jensen's Responses to Plaintiff's First Set of Interrogatories.
12. Accident scene photographs taken by the Wayne County Sheriff's Department (WCSD).
13. Accident site photographs and video provided by Mr. Boyd.
14. Aerial and street view images of the accident site area.
15. Specification data for the Manac trailer being towed by the Gibson tractor.
16. A purchase order dated March 5, 2012, from Cornhusker Ag Group, LLC.
17. NMC CAT invoice dated June 29, 2012.
18. Butler Ag Equipment invoice dated March 12, 2014, and July 29, 2014.
19. Photographs of the Gibson tractor taken by a third party.

Deposition Summaries:

1. Tristen Gibson:

He was located in the cab of the tractor with his dad at the time of the accident. He had been through the accident intersection before (pg. 12). He and his dad stopped at CAT scales and determined the tractor and trailer were not overweight (pg. 15). As they were going northbound on Highway 57 they came over a hill and he saw a RoGator in the roadway. Once this occurred he believes his dad slammed on the brakes prior to the accident (pg. 21). When he first saw the RoGator it was within the northbound lane and was facing into the left lane. He does not remember seeing a turn signal on the RoGator. He believes the front tires on the RoGator were right on the centerline when he first saw the RoGator and the front of the RoGator was facing west (pgs. 22-23). The RoGator was moving very slowly when he first saw it (pg. 24). The front passenger side of the truck came into contact with the front left side of the RoGator (pg. 25). His dad swerved into the left lane trying to avoid the collision and applied the horn (pg. 26).

2. Brieson Jensen:

The deposition testimony of Mr. Jensen will be discussed later in the report.

**Photographs – Appendix A:**

<u>Accident Site Photographs Taken by FAAR Consulting, LLC on March 31, 2015</u>	
<u>Photograph #</u>	<u>Description of Photograph</u>
1-2	Looking northbound on Highway 57 as one approaches the point of impact location. This is the direction Mr. Gibson was traveling prior to impact. In photograph 2, 857 Road (on the left side of the photo) intersects Highway 57.
3	Looking southbound on Highway 57 from a location north of 857 Road. Note the crest of hill in the background of the photo. This is the hill crest that Mr. Gibson would have traveled over prior to impact.
4-6	Views of a northbound tractor/trailer from a vantage point near the centerline of the field drive located directly east of 857 Road. Note in photograph 6 the tractor/trailer has moved partially into the southbound lane of Highway 57 due to the presence of a pedestrian and/or vehicle within the field drive.
7	View looking west at 857 Road.
<u>Accident Scene Photographs Taken by WCSO</u>	
8-11	The at-rest position of the RoGator on Highway 57. Photograph 8 is looking south towards the RoGator. Note in photograph 10 the tire mark leading directly to the left rear tire. This tire mark is due to the post-impact rotation of the RoGator. Note the left front tire and rim has been separated from the front axle due to the impact with the Gibson tractor.
12-13	The at-rest position of the Gibson tractor/trailer located to the northwest of the point of impact location. Note the front of the tractor impacted and came to rest against a large tree.
14	The front of the Gibson tractor after it was pulled back from against the large tree.
15-16	Tire marks on the roadway from the Gibson tractor and the RoGator. In photograph 15 note the position of the left front tire ("A") of the RoGator relative to the tire marks from the right side ("B") of the Gibson tractor at the time of impact. In photograph 16, note the tire mark from the right front steer tire ("B1") on the Gibson tractor. Also, note the tire marks left by the left rear ("C") and right rear ("D") tires of the RoGator as it rotated post-impact to its at-rest position.
17	A view looking west at the tire marks left by the left rear ("C") and right rear ("D") tires of the RoGator as it rotated post-impact to its at-rest position.
18-19	Views looking at the tire mark left by the right front tire of the RoGator as it rotated post-impact to its at-rest position.



20-22	Views looking north/northwest at the pre and post-impact tire marks from the Gibson tractor/trailer. Note the location of the origin of the pre-impact tire marks and the angle of the tire marks. The angle of the tire marks indicate that at the time of brake application by Mr. Gibson the tractor/trailer was no longer positioned within the northbound traffic lane but rather located almost entirely within the southbound traffic lane.
23	The pre and post-impact tire marks from the Gibson tractor/trailer from a view looking south.

Accident Reconstruction Figures:

An engineering survey of the accident site was conducted by FAAR Consulting on March 31, 2015. To prepare the accident site drawings the following data was used: total station survey data points from FAAR Consulting, aerial imagery, and photographs of the accident site and scene taken by FAAR Consulting and the WCSD.

Figure A is a scale drawing of the accident intersection and surrounding area. Note the following items on Figure A:

1. Highway 57 has one traffic lane in the northbound and one traffic lane in the southbound direction.
2. The field drive and 857 Road intersecting Highway 57.

Figure B is the same scale drawing of the accident site as Figure A but also contains the physical evidence documented within the scene photographs taken by the WCSD. The pre-impact tire mark locations from the Gibson tractor/trailer, the post-impact tire marks from the RoGator and the at-rest positions of the vehicles were determined based upon the total station survey conducted by FAAR Consulting and a review of the accident site/scene photographs. Various roadway features were documented by FAAR Consulting that assisted in preparing the accident site figures. The at-rest position of the Gibson tractor/trailer is shown in **position G1** and the at-rest position of the Jensen RoGator is shown in **position J1**.

Figure C is the same scale drawing of the accident site as Figure B but also shows the approximate positions of the vehicles at impact. The positions of the vehicles at the time of impact were based on the vehicle damage analysis, the pre-impact tire marks from the Gibson tractor, and the post-impact tire marks of the RoGator. The point of impact positions for the Gibson tractor/trailer and Jensen RoGator are **positions G2 and J2** respectively.

Accident Reconstruction Analysis:

1. The deposition testimony of Mr. Jensen was analyzed and there were several items of note regarding said testimony.
 - A. First, on exhibit #6 Mr. Jensen marked the location in which he was planning to ultimately park while waiting for his load (pg. 59). At the time of the accident, he "was heading to the minimum maintenance road in the intersection to the west, as



that was the best location to load for the field" (pg. 58). His intention was to ultimately face the RoGator towards Highway 57 (facing east) once it was in a parked position. He was intending to go to a field entrance and then proceed to turn and come back to park in the location marked on exhibit #6 (pg. 67).

FAAR Analysis: If Mr. Jensen was intending to turn left onto 857 Road so that he could travel up the roadway, turn around and park in the position marked on exhibit #6 one could reasonably expect the turning path would be directed within the width of 857 Road. However, as shown in accident site Figure C the front of the RoGator was well north of the centerline of 857 Road at the time of impact. This is an indication as testified to by Mr. Jensen that he had never driven around the location of the accident before and it was the first time he had driven that route (pg. 61).

- B. Second, Mr. Jensen described the location along Highway 57 at which he began to make a left turn. Referring to exhibit #6 he stated that he began to make the left turn "around the seven" for 567th Avenue (pg. 69). This position is where he would have assumed the turn started but he does not recall specifically where the turn began (pg. 69-70). He later testified he stopped at the "A" of Avenue shown on exhibit #6 and from that position is where he made the turn (pg. 74).

FAAR Analysis: The "A" of Avenue referred to above is located at "Tar Line #1" shown on the FAAR accident site figures. "Tar Line #1" is located a significant distance south of the centerline of 857 Road. The "seven" referred to above is also located south of the centerline of 857 Road. These locations would not be reasonable locations from which Mr. Jensen would have started his turn for two reasons. First, he knew that he needed to travel west on 857 Road and turn around to come back east and park. Testifying to this, there is no reasonable explanation as to why the position of the RoGator at the time of impact would be such a distance north of the centerline of 857 Road. Second, if he did start the turn at the locations testified to he could have easily turned into the center of 857 Road as planned rather than being positioned well north of 857 Road at the time of impact. Thus, it is reasonable to conclude that Mr. Jensen did not start his left turn in the locations referred to in his deposition.

- C. Third, Mr. Jensen testified that he "may have kind of been half on the highway, half off the highway, stopped for a brief amount of time and then decided to turn onto the minimum maintenance (road)" (pg. 72.). There was further discussion regarding the actions of Mr. Brieson prior to commencing the left turn. That discussion from pages 72 to 73 is set forth below:

Q: "Okay. So as you're thinking about it, you think you were probably going north on Highway 57, you sort of veered to the right, you were probably half on the shoulder, half on the road as you were kind of looking around where to go?"

A: "Yes, sir."

Q: "So you think you were fully stopped?"

A: "Yes, sir. Fully stopped or less than three miles an hour."



Q: "Okay. So you were kind of stopped half on the road, half on the shoulder, deciding do I turn left right here or do I turn left at the next option."

A: "Yes, sir."

He later described that when he was stopped the RoGator was probably 75 percent on the road and 25 percent off the road. It was from this position that he made the turn (pg. 74).

FAAR Analysis: Mr. Jensen testified multiple times that a significant portion of the RoGator was located on the east shoulder area of Highway 57 in a stopped or nearly stopped position while determining where to go next. Upon seeing the RoGator partially on the shoulder and partially in the northbound traffic lane of Highway 57, in a stopped or nearly stopped position, a prudent driver traveling northbound would begin the process of moving into the southbound traffic lane so that one could safely pass the RoGator. The RoGator was occupying a significant portion of the northbound lane and Mr. Gibson was forced to travel to the left of the RoGator in order to continue traveling northbound and avoid an impact with the RoGator within the northbound traffic lane.

2. Pre-Braking Speed of the Gibson Tractor/Trailer:

The energy loss due to impact with the RoGator, the post-impact travel to the large tree, and the impact with the large tree where the Gibson tractor/trailer came to rest introduced too many uncertainties to reliably calculate the pre-braking speed of the Gibson tractor/trailer.

Thus, for analysis purposes it was assumed the Gibson tractor/trailer was traveling at a pre-braking speed of 60 MPH, the speed limit of Highway 57.

3. Time-Distance Analysis:

A time-distance analysis was conducted to determine the approximate vehicles positions at certain times prior to impact.

In order to conduct a time distance analysis the pre-impact braking time of the Gibson tractor/trailer was calculated based upon an assumed pre-braking speed of 60 MPH and a pre-impact braking distance of approximately 130 feet. Based on a review of the accident scene photographs and the accident site measurements it was determined that the tractor and trailer each left approximately 130 feet of pre-impact tire marks. A review of the pre-impact tire marks shown in the scene photographs reveal the tire marks consist of both dual tire marks from the tractor and dual tire marks from the trailer.

The time elapsed to apply the brakes fully over a distance of 130 feet from an approach speed of 60 MPH was approximately 1.8 seconds. If a 1.5 second perception-response time (PRT) is used for Mr. Gibson that indicates that approximately 3.3 seconds prior to impact he perceived the Jensen RoGator as a danger.

The distance traveled during this 3.3 seconds prior to impact was 262 feet. In other words, the Gibson tractor/trailer traveled 262 feet during the 1.5 second PRT and the approximately 1.8 seconds of pre-impact braking.



Based on measurements taken by FAAR Consulting it was determined the hill crest located to the south of the accident intersection was located approximately 725 feet from the point of impact location. Thus, the Gibson tractor/trailer traveled 463 feet and 5.26 seconds north of the hill crest to the location where Mr. Gibson first began to perceive the left turning Jensen RoGator as a danger.

Based on the above discussion the positions of the vehicles approximately 3.3 seconds prior to impact needed to be determined. Mr. Jensen testified to the following regarding his actions both prior to and during the left turning maneuver up to the point of impact:

- He was stopped or nearly stopped for no more than 15 seconds as he was evaluating whether to turn left at the minimum maintenance road or to turn left at the next option (pg. 73).
- He stated, "I may have kind of been half on the highway, half off the highway, stopped for a brief amount of time and then decided to turn onto the minimum maintenance (road)" (pg. 72.) When he started to turn he immediately started to turn to the left (pg. 66).
- He slowed down to almost 8 MPH, probably lower than that, at the start of the turn. He estimates the speed of the actual turn would be approximately 4 to 5 MPH (pgs. 66-68). During the turn he was at a constant speed but right before the collision he pulled back on the hand throttle to try and stop (pg. 74).

An average turning speed of 5 MPH for the RoGator was used for analysis purposes. The RoGator would have traveled 24.2 feet in a time of 3.3 seconds if the average turning speed was 5 MPH. The RoGator he was driving on the day of the accident was a two-wheel steer on the front wheels (pg. 81-82). Since the point of impact position of the RoGator was known based on the tire marks documented at the accident scene, a reasonable turning maneuver, for the RoGator's position relative to 857 Road, was used to determine the approximate position of the RoGator at the start of the 24.2 foot left turning maneuver. The position of the Gibson tractor/trailer 3.3 seconds prior to impact was also located on **Figure D**. Positions labeled **G3** and **J3** on **Figure D** represent the approximate locations of the Gibson tractor/trailer and the Jensen RoGator at the **start** of the left turn by Mr. Jensen. Note in position **J3** approximately one quarter of the RoGator is east of the white edge line as testified to by Mr. Jensen. Also, note the Gibson tractor/trailer in position **G3** is already in the process of changing lanes to travel around the stopped or nearly stopped RoGator that is partially off the northbound travel lane and obstructing northbound through traffic from maintaining their position entirely within the northbound lane. Had Mr. Jensen looked in his side mirrors prior to starting the left turn he would have been able to see the approaching Gibson trailer/trailer and could have simply remained in his location until his turning path was clear.



Conclusions and Opinions:

Based on the review and analysis of the available information, the following statements and opinions can be made relative to the circumstances surrounding this accident.

1. Based upon the position of the RoGator at the point of impact, Mr. Jensen was not making a typical left turn onto 857 Road at the time of the accident.
2. Based upon the analysis conducted it is reasonable to conclude that Mr. Jensen did not start his left turn in the locations referred to in his deposition.
3. The position of the Jensen RoGator stopped or nearly stopped partially within the northbound lane obstructed the normal flow of northbound traffic on Highway 57.
4. When the RoGator was positioned partially on the shoulder and partially within the northbound traffic lane, Mr. Gibson was exercising caution by traveling into the southbound lane in an attempt to safely pass the RoGator.
5. The RoGator was occupying a significant portion of the northbound lane and Mr. Gibson was forced to travel to the left of the RoGator in order to continue traveling northbound and avoid an impact with the RoGator within the northbound traffic lane.
6. When the RoGator was positioned partially on the shoulder and partially within the northbound traffic lane, it had relinquished the right-of-way to the northbound Gibson tractor/trailer. Thus, prior to starting the left turn Mr. Jensen needed to ensure there were no northbound vehicles approaching the accident intersection.
7. Based on the analysis conducted, it can be concluded that Mr. Gibson saw the RoGator partially on the shoulder and partially within the northbound traffic lane after he crested the hill. In response to the position of the RoGator he began to commence a lane change maneuver into the southbound traffic lane.
8. Mr. Gibson had commenced his lane change maneuver into the southbound lane prior to the start of Mr. Jensen attempting to make a left turn into the area north of 857 Road.
9. Had Mr. Jensen looked in his side mirrors prior to starting the left turn he would have been able to see the approaching Gibson trailer/trailer and could have simply remained in his location until his turning path was clear.

If additional information becomes available please forward the information to my office and I can review the same to see if any revisions to the analysis need to be made. Should you have any questions please contact me at your convenience.



Sincerely,

A handwritten signature in black ink, appearing to read "Steve F. Sokol".

Steve F. Sokol, P.E., J.D.

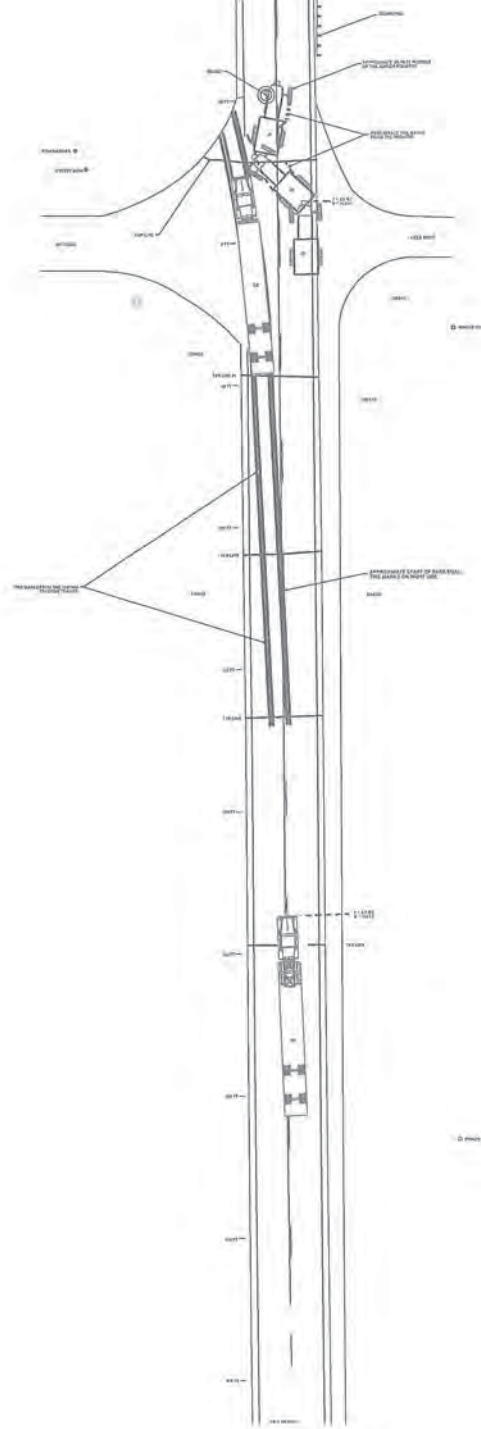




FIGURE A



FIGURE D



THOMSON
DELMAR LEARNING

ACCIDENT INVESTIGATION



Wheat
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AGREN BLANDO REPORTING

NATMI
North American Transportation Management Institute

Arnold Wheat

Accident Investigation Training Manual

Arnold G. Wheat

*Accident Reconstruction Specialist,
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5

Investigative Factors

The process of investigating a motor vehicle crash involves identifying information and data about the accident with respect to three different subject areas: the human, the vehicle, and the environment. The purpose of this investigative process is to identify and document the myriad of contributing circumstances or factors present to create the crash event. Studies have shown that there are rarely singular causes for a traffic accident. They are caused by a combination of activities, factors, omissions, and mistakes. In order to investigate a traffic accident accurately, you need to understand the relationship between the various elements that join together and result in a crash.

In an attempt to articulate and categorize the components of a traffic crash incident, the National Highway Traffic Safety Administration developed an organizational chart of the three contributing elements. That organizational chart also identifies time intervals related to the accident event, which allows the investigator to identify and understand the complex issues and factors that combine to describe the manner in which the collision occurred and the reasons for the crash.

The three elements include the human aspect, the vehicle equipment, and the environment, which refers to both the highway environment as well as the atmospheric environment. Combined, they form a relationship often referred to as "H-V-E." These H-V-E elements and the three time periods for studying those elements, provide a platform for assembling information regarding a traffic

crash, which allows you to develop conclusions about the cause of the accident. Compare the three elements of a traffic accident with the three legs of a stool. Each leg provides support and stability to prevent a situation or an event from occurring. When one leg of the stool does not perform as expected, something happens. We call it an "accident."

The Human Element

- The human involvement in an accident includes people such as the drivers involved in the event and the passengers who may occupy any of the vehicles involved in the event.
- The human involvement also includes any independent witnesses to the crash event or its aftermath. Witnesses may be passengers (such as those on a city transit bus), other motorists in the immediate area of the crash, motorists who viewed the driving behaviors of one of the involved motorists before the crash event, or bystanders who may have been walking or standing near the crash location.
- The human element also includes people who have some relationship to the accident event, such as police officers, fire and emergency response personnel, ambulance and paramedic responders, tow truck drivers, HAZMAT clean-up responders, independent claims adjusters, independent photographers, and news media personnel who responded to the accident scene. Any of these people may be able to offer information on the activities, events, and circumstances surrounding the accident.

The Vehicle Element

- The vehicle element includes each vehicle involved in the traffic accident. The year, make, model, seating capacity, engine size, transmission type, and ownership information are initial points of data that need to be collected.
- You also need to focus on the dimensions, the design profile, and the presence of cargo in each vehicle. These areas will allow you to evaluate, to some extent, how the vehicle responded during the pre-impact approach movement and how the vehicle reacted during the crash event.
- The vehicle element also relates to the presence of, or the absence of, physical damage on each vehicle. This information will allow you to assess the manner in which the vehicles collided, the magnitude of collision forces, and the potential for personal injury to occupants within each vehicle.

The Environment Element

- The environment element includes the highway environment as well as the ambient and atmospheric conditions present at the time of the crash.
- The highway environment includes the type of pavement surface, the condition of the pavement, contaminants or debris on the pavement surface, the various types of traffic controls in the area, and the presence of artificial light sources. Terrain, topographical features, and land use in the area where the highway is situated are also included in this element.
- Weather conditions, such as wind, rain, snow, sleet, and fog, are factors incorporated in the environment element. Lighting conditions related to the extent of daylight or the degree of darkness and the influence of fog, wind, rain, and snow on the driver's ability to see are environmental elements.

Time Frames

During your investigation and evaluation of the traffic accident, you must document and organize data, information, and evidence relating to these subject areas during three different time frames:

- Before the crash event
- During the crash event
- After the crash event

Keep in mind that the time frames are not necessarily narrowly defined. For example, "before the accident" could encompass several minutes, several hours, several days, or several months prior to the collision event. Determination of the extent of the time frame is entirely up to you, the nature of the accident event, and the depth of your investigation.

Identifying contributing circumstances and causal factors during three different time periods can be simplified by using a very basic spreadsheet. Your task should involve identifying and organizing information and data within each of the spreadsheet cells. In some crash events, however, your focus may be widened with the addition of certain cells. Table 5-1 illustrates how the elements for investigation integrate with the three different time frames.

In Table 5-1, only four items are listed for each accident component category at each different time interval. Your investigation should not be limited to just those topics and subtopics. These examples are listed to assist you in understanding the concepts and to recognize the unlimited potential for inquiry, if the circumstances of the traffic accident necessitate additional or in-depth inquiry.

42 *Investigative Factors***Table 5-1: Time Frames and H-V-E Elements**

	BEFORE CRASH EVENT	DURING CRASH EVENT	AFTER CRASH EVENT
HUMAN	Physical Condition Medical Limitation Driver Inexperience Fatigue	Intoxication Distraction Unfamiliarity with Area No restraint	Personal Injuries Impact with Interior Medical Treatment Statements Made
VEHICLE	Vehicle Specs Maintenance History Unsafe Loading Modifications	Angle of Impact Approach Speed Lane Position Load Shift	Exterior Damage Interior Damage Occupant Ejection Component Failure
ENVIRONMENT (Highway and Atmospheric)	Highway Design Traffic Control Device Surface Treatments Traffic Volume	Weather Conditions Travel Advisories Tire Marks Gouges	HAZMAT Spill Towing and Recovery Highway Fixture Repair Load Clean-up

Let's examine a hypothetical accident situation to illustrate how you can expand your investigation of the category "Human—Before Crash Event." Our example involves a fairly new employee to your company who was involved in a traffic accident in the morning near a customer location. Your inquiry into the investigative category may include the following questions:

- How long has this driver been with the company?
- How many times has this driver traveled this route or delivered to this customer?
- How much experience did this driver have with the type of company vehicle, truck, motor coach, or truck tractor and semi-trailer that he was driving at the time of the accident?
- What training did this driver have when he became an employee?
- Who performed the road test of this driver before he or she was hired?
- Did the road test cover driving situations similar to those that occurred during the accident event?
- What type of driving experience (OTR, local, regional, type of truck equipment) did this new employee have prior to being hired?
- What type of experience did this driver have hauling your type of products and trailer loads?
- Did this driver suggest or indicate a medical situation related to the accident event which was not disclosed on his application or during the physical?
- Did this driver have anything in the cab, such as food or a cell phone, that may have caused a distraction?

- Was this driver given proper directions, or did the driver inquire about possible routes to the customer location?
- Does this driver have any hobbies, family situations, or outside activities that may have caused unusual fatigue?
- Did any of the driver's coworkers notice any problems or unusual behavior that may suggest a situation or influence outside the company that significantly affected his or her ability to work safely?

As you can see, it would be fairly easy to expand the focus of your investigation into the category of "Human—Before Crash Event," if the circumstances or accident situation warrant it. With the examples cited, it is clear that you should be considerate of an employee's interests and activities outside of the work environment. Depending on the circumstances, however, you may have an indication to investigate further.

Elements of a Traffic Crash

Typically, common elements can be identified in traffic collisions. These elements occur prior to, during, and subsequent to the crash event. In many situations, the exact location or area where some of the events transpire may not be readily identifiable. A discussion of the common elements may be helpful in understanding the entire sequence of events that can occur in a crash.

Possible Perception

This element refers to the area or general location where a hazard, or potentially hazardous situation, could be perceived by an attentive person. Possible perception typically occurs prior to perception. The driver's ability to view the area ahead allows an opportunity to understand the situation, evaluate options, and then decide on a course of action. This process of possible perception may take place over an extended time or it may occur with perception.

Driver training courses and guidelines stress the necessity for any driver to scan ahead of the vehicle's position. That distance is recommended to be approximately 5–15 seconds, with respect to the speed at which the vehicle is traveling. If a time duration of 10 seconds is assumed with a speed of 65 miles per hour (which can be calculated as an equivalent 95.2 feet of travel distance per second of time), this would require scanning a distance of approximately 950 feet, or slightly less than 0.2 mile.

Many state-issued driving manuals also recommend the practice of advance scanning, which is incorporated into defensive driving techniques. Your investigation should, if possible, document the appropriate range of distances for possible perception, so you can understand what a driver may have viewed during this phase preceding the accident event.

44 *Investigative Factors*

There are limitations on a driver's ability to scan ahead and to extend the time of possible perception. Factors relating to topography, highway geometry, ambient light, and traffic congestion may alter or reduce the ability to extend the possible perception element (see Figure 5-1).

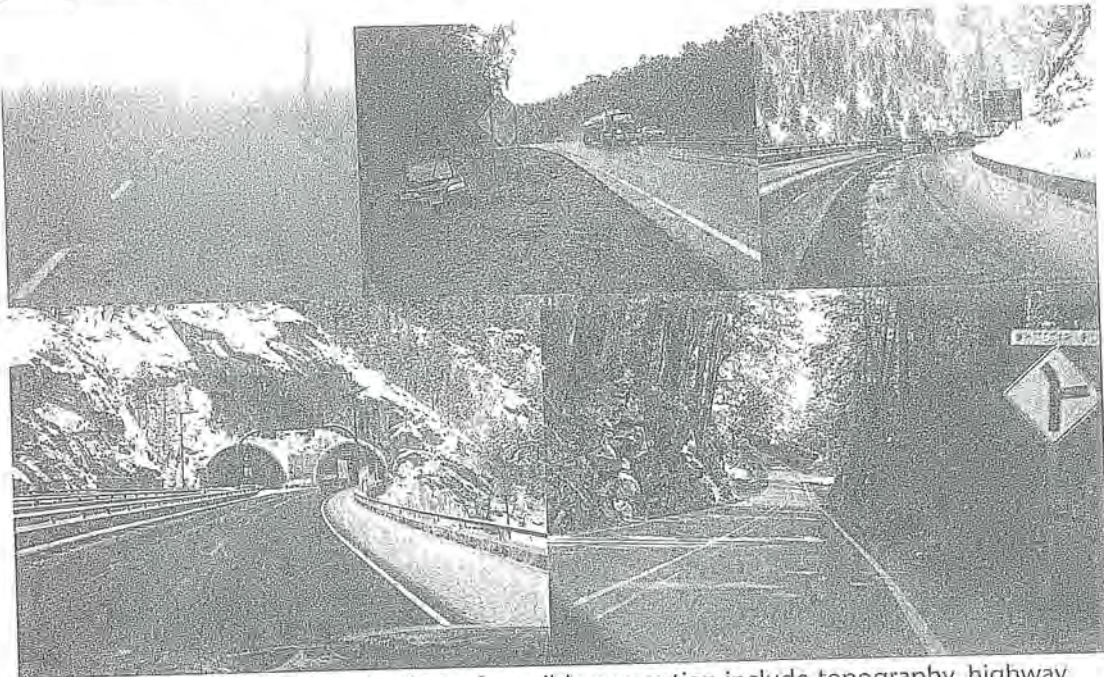


Figure 5-1 Factors limiting the time of possible perception include topography, highway geometry, ambient light, and traffic congestion.

Perception, Reaction, and Response

These elements are combined, as there is no practical means to separate them. Some published materials suggest that a time duration of three-fourths of a second for the perception process and three-fourths of a second for the reaction-response process should be applied to pre-collision activities for drivers exposed to an impending traffic collision. These figures, which are used in many traffic books, safe-driving pamphlets, and state-issued driving manuals, have been used by many safety personnel when conducting their investigations.

However, current analysis and research conducted by Jeffrey W. Muttart of the Accident Dynamics Research Center identifies the substantial limitations imposed by such assumptions regarding perception, reaction, and response. In his extensive research and real-world testing, Mr. Muttart identified several factors that contribute to his conclusion that drivers will respond differently to

different stimuli while driving and when faced with a potentially hazardous situation. The situational factors that may need to be considered and/or evaluated include the following:

Contrast Contrast of the potential hazard or situation related to the surrounding area. This is, in part, a function of the quantity of light available to view the potential hazard or situation.

Anticipation Anticipation of the driver, by analysis of whether the driver knows the potential stimulus and potential responses to that stimulus while driving.

Strength of the stimulus Strength of the stimulus, which relates to the movement, size, and intensity of the stimulus, indicating a potential hazard or situation.

Eccentricity Eccentricity which refers to the angle at which the driver is looking, relative to the location of the potential hazard or situation. This relates to both the separation of the potential hazard stimulus to the sides of the driver and the separation distance ahead of the driver.

Cognition Cognition which refers to the decision-making process by a driver based upon the information available to him or her, the complexity of that information, and the driver's recognition of the options available.

Response complexity Response complexity which refers to the ability of a driver to consider any alternative or optional responses to a given hazard or situation.

Mr. Muttart developed a computer-based analytical process for evaluating perception-reaction-response factors, wherein the factors and contributing circumstances for a given situation are itemized and then evaluated. He concludes that each situation must be analyzed before a range of probable perception-reaction-response times can be offered. His research, as well as the research of other analysts involved in the human aspects of traffic crashes, strongly discourages assigning an arbitrary assumption of a perception-reaction time to this grouping of accident elements.

Encroachment

Encroachment occurs when another vehicle or object enters the path, or intended path, of travel of a vehicle. Once that occurs, the offending vehicle or object quickly changes from a possible hazard to an imminent hazard, depending upon the time frame, the closure speed, and the separation distance between the vehicles.

46 *Investigative Factors*

The encroachment does not necessarily have to occur when a vehicle, for example, crosses the center line of a highway. It can occur at an intersection, a private driveway exit, or a highway interchange. Encroachment can also occur during a lane change situation, with both vehicles traveling in the same direction on a highway, or when one overtaking vehicle comes in close proximity to the vehicle being passed.

The proximity of the potential hazard may be very close, as in an undivided highway where two opposing directions of travel are present. Typically, vehicular traffic on these highways travels at speeds in excess of 40 miles per hour. Therefore, the time duration to detect and evaluate the encroachment may be minimal. The time duration may also be minimal, due to additional highway environmental factors, such as a grade and curvature in the roadway alignment. Figure 5-2 depicts the evidence from a head-on collision between a delivery truck that crossed over the center line and a light-duty pick-up truck.



Figure 5-2 Evidence from a head-on collision between a delivery truck, which crossed over the center line, and a light duty pick-up truck.

Start of Evasive Action

The start of evasive action refers to the location where physical evidence exists indicating where an attempted accident avoidance maneuver began or the location where calculations can be completed to indicate where that maneuver

probably began. In most accident avoidance situations, a driver typically has limited options for avoiding the potential hazard or impending collision. Those options include:

- Steering toward the right
- Steering toward the left
- Braking the vehicle to slow or stop
- Accelerating the vehicle
- Implementing both braking and steering maneuvers
- Doing nothing

Keep in mind that significant evasive maneuvers do not always create physical evidence on the pavement surface. Thus, the absence of *evidence* of an evasive maneuver attempt does not necessarily establish evidence of the absence of an evasive maneuver attempt.

For example, during the approach to a traffic signal light that is changing from green to yellow to red, a driver may aggressively slow the vehicle by braking, but not leave any tire marks. A substantial braking maneuver by a driver operating a vehicle with an Anti-lock Braking System (ABS) may not leave distinguishable tire marks on the pavement surface. A swerve to avoid a hazard, such as an animal in or near the traffic lane, may not create tire marks to indicate where the swerve was initiated. For those types of evasive maneuver incidents, repetitive mathematical calculations may need to be performed, utilizing reasonable value ranges for perception, reaction, deceleration, acceleration, and/or swerving.

The accident shown in Figure 5-3 related to the encroachment of a vehicle from the intersecting highway on the right side of the photograph. A combination truck unit traveling on the through highway initiated evasive action by aggressively braking. A jack-knife eventually occurred with the combination truck unit. If physical evidence to indicate braking is present, as illustrated in the photograph, you can determine where that evasive action started relative to the collision location.

The arrow in the photograph indicates where tire marks begin on the pavement surface. It is important to note, however, that the actual braking process was initiated *prior* to this location. Considering the time and distance consumed by the commercial vehicle from the initiation of pressure on the brake, the time required to build system pressure to effectively slow the vehicle, and then the transition from rolling tires to fully sliding tires on the vehicle, the commercial vehicle initiated evasive action prior to the start of tire marks shown in the photograph. Studies have shown that this time duration could be within a range of approximately 0.25–1.5 seconds, depending on the mechanical set-up and condition of the brake system, vehicle design, loading considerations, and pavement surface conditions.



Figure 5–3 Evidence of evasive action. *Photo courtesy of Lafayette, Colorado Police Dept.*

First Harmful Event

By definition, the first harmful event relates to the first occurrence of personal injury or property damage involving the movement of a motor vehicle; this characterizes the collision type. The first harmful event is usually classified as one of the following traffic accident events:

- Non-collision on or off the roadway (such as a rollover crash)
- Collision with pedestrian
- Collision with other vehicle in motion
 - Broadside
 - Full impact—opposite direction (head-on)
 - Full impact—same direction (rear end)
 - Partial impact—same direction (sideswipe)
 - Partial impact—opposite direction (sideswipe)
 - Approach turn collision
 - Overtaking turn collision
- Collision with other vehicle
 - Parked vehicle
 - Bicycle, motorized bicycle, or skate board

- Railway vehicle
- Highway maintenance vehicle
- Collision with animal
- Collision with other object (highway fixtures and controls)

Initial Contact and Maximum Engagement

The time interval of *initial contact* relates to the point when a moving vehicle comes in contact with another vehicle or object. The time interval relating to *maximum engagement* designates when the two objects, having collided, attain the greatest penetration in damage, and when any momentum (mass multiplied by velocity) exchange between the two vehicles has been completed.

In Figure 5-4, the photograph on the top shows initial contact has just occurred. Maximum engagement has occurred in the photograph on the bottom, in a time duration of approximately 0.10–0.20 seconds. Note that the air bag has been deployed inside the Ford vehicle and the aggressive braking by the driver has produced significant forward weight shift within the vehicle, compressing the front suspension.

In Figure 5-5, initial contact is occurring in the upper left photograph. Maximum engagement is occurring in the upper right photo and initial separation has occurred by the lower left photo. Notice the movement of the semi-trailer, as evidenced by the white stripe painted on its tire sidewall. During the collision phase, the changing positions of both the semi-trailer and the Ford Explorer relative to the stationary camera position placed adjacent to the two colliding vehicles also indicate the forward movement, or translation, of the vehicles toward the right in the photographs.

Disengagement or Separation

This element occurs when contact between the two vehicles, or the vehicle and another object, ceases. The energy transferred from one vehicle to another, due to differences in the speed and/or weight between the two vehicles, has occurred. The post-impact velocity of each vehicle causes the *separation*, typically due to the residual speed of one vehicle after the actual collision phase (defined as the initial contact and then maximum engagement) has finished.

Figure 5-6 shows two vehicles involved in a staged collision that have separated. The initial contact and maximum engagement have already occurred. The damage resulting from the collision is evident on the front structures of both the white van and the pick-up truck. The white van is still experiencing the transferred kinetic energy resulting from the collision, as evidenced by its clockwise rotation and its airborne displacement (or movement from where the initial contact position was located). The time interval between initial contact and separation in this type of head-on collision is typically 0.10–0.30 seconds.

50 *Investigative Factors*

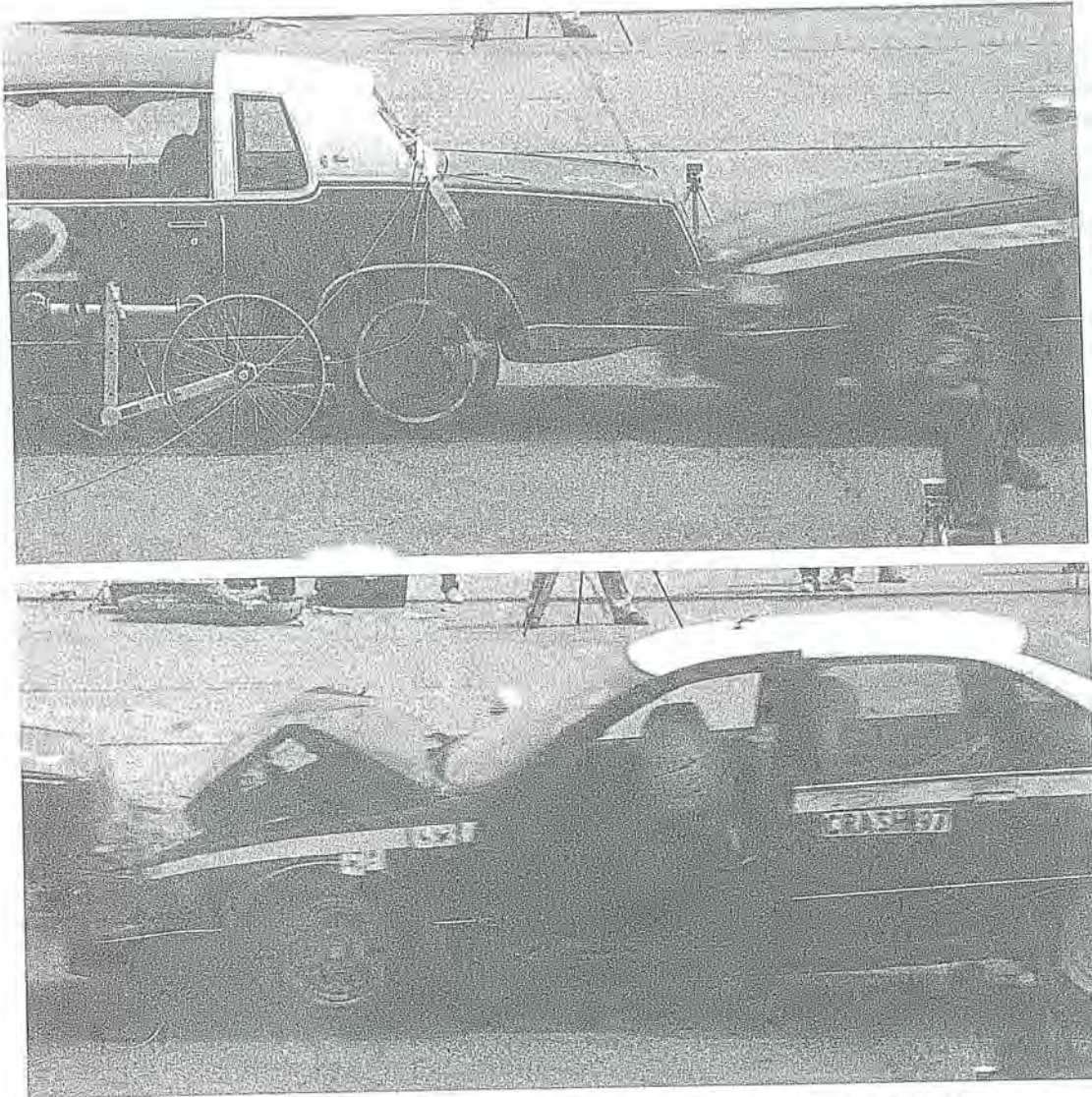


Figure 5-4 Initial contact (top) and maximum engagement (bottom).

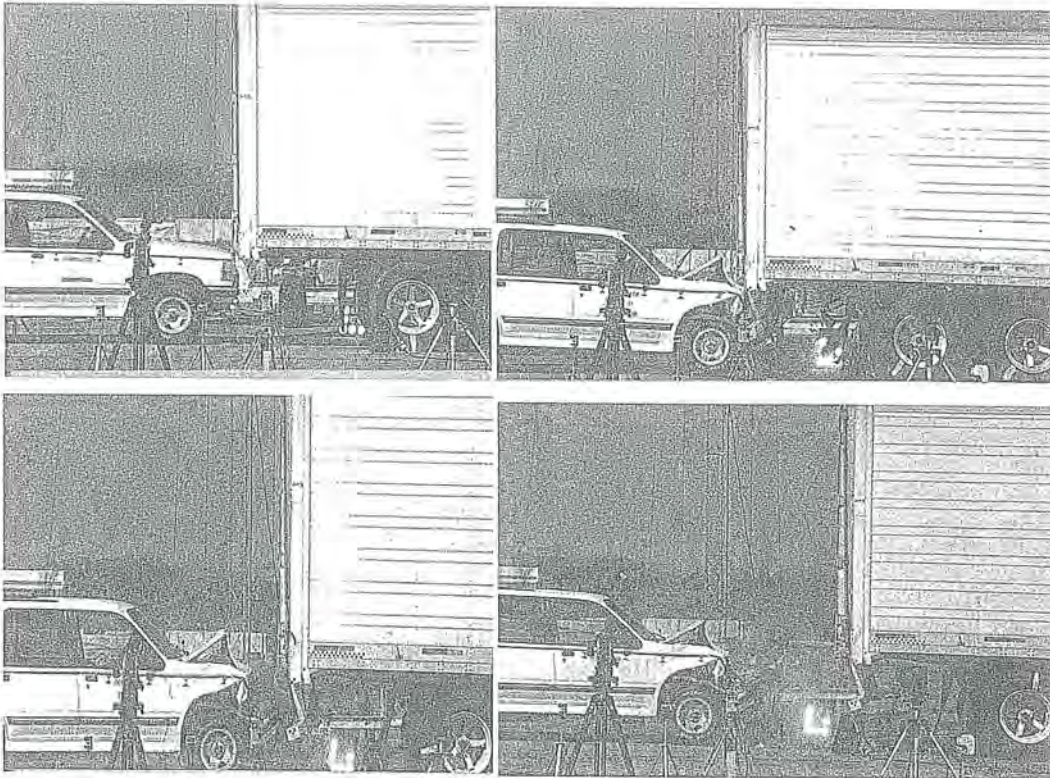


Figure 5-5 Crash sequence time intervals. Initial contact (upper left), maximum engagement (upper right), initial separation (lower left), final rest position (lower right).



Figure 5-6 Separation after initial engagement.

Final Rest Position

The point where a vehicle finally comes to a stop after crashing is referred to as the *final rest position*. This location is of importance, as it is usually the position noted, documented, and measured by law enforcement officers assigned to investigate the traffic accident. Typically, this will be the starting point of your investigation of the traffic accident.

The final rest position is also important as it may allow an assessment of the speed of one or more of the two vehicles at impact. The manner in which a vehicle arrives at the location of final rest can be categorized as either of the following:

Uncontrolled Movement to final rest was dictated by the forces of the collision without any input by the driver (see Figure 5-7).

Controlled Movement to final rest was directed and controlled by the driver of the vehicle (see Figure 5-8).

The significance of final rest positions relates to the information that may be derived from that data. The location of final rest and the manner in which the vehicle(s) arrived there may allow a determination of:

- Impact location
- Departure angle
- Approach path of vehicle(s)
- Inference of speed prior to impact
- Velocity change during and after impact

The location of final rest positions is determined by tire mark-evidence, metal scratches/gouges in the pavement surface, liquid or solid debris that has leaked or fallen from the stopped vehicle, a fluid trail from the vehicle as it traveled to that location, or markings made by the investigating officer on the pavement surface. Information may also be derived from interviews of drivers, witnesses to the accident, and bystanders who came upon the accident after it has occurred.

Pavement markings outlining and highlighting tire-mark evidence created by one of the vehicles in a multivehicle, head-on collision, can be seen in Figure 5-8. The physical evidence strongly indicates that the driver of this vehicle steered the vehicle off of the highway and onto the shoulder after the crash event. This driving control occurred even though a tire of the vehicle was obviously damaged. The arrow in the image on the right points to the "T" marking spray painted by the officer at the point where the left rear wheel of the vehicle came to a controlled stop.



Figure 5-7 Uncontrolled positions of rest.



Figure 5-8 Evidence of controlled stop.